DOCUMENT RESUME

ED 194 539 TM 800 668

AUTHOR Soder, Jane B.
TITLE Evaluation of the First Field Test of the Minimum Competencies Performance Test. Report No. 79-11.
INSTITUTION Seattle Public Schools, Wash. Dept. of Planning, Research, and Evaluation.
PUB DATE Jul 79
NOTE 104p.

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Daily Living Skills; Factor Analysis; *Graduation Requirements; High Schools; Minimum Competencies; *Minimum Competency Testing; Test Bias; *Test Reliability
IDENTIFIERS Life Skills; *Minimum Competencies Performance Test; *Seattle Public Schools WA

ABSTRACT

Mastery of sixteen "life skills" tasks will be a Seattle Public Schools graduation requirement beginning in 1981. Five forms of the Minimum Competencies Performance Test, which will be used to measure mastery of those tasks, are presently being developed and field tested. This report presents the results of the analysis of the first field test. The five forms of the test as a whole have high internal consistency, are stable, and are moderately equivalent to one another. The fourteen individual competencies measured by each form are not as internally consistent, nor are they as stable or as equivalent from form to form. Some items need to be replaced in order to improve the reliability and equivalency of both the total test and the individual competencies. If demonstration of mastery of all fourteen competencies becomes the graduation requirement, the number of items measuring each competency should be increased. The results of this analysis were used in the development of the revised version of the Minimum Competencies Performance Test used for the Spring, 1979 field test. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED194539

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

EVALUATION OF THE FIRST FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

REPORT NO. 79-11
July, 1979

JANE B. SODER

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. G. Colwell

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Department of
Planning, Research & Evaluation

SEATTLE
PUBLIC
SCHOOLS

TM 800 668

SEATTLE PUBLIC SCHOOLS
Administrative and Service Center
815 Fourth Avenue North
Seattle, Washington 98109

EVALUATION OF THE FIRST FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

REPORT NO. 79-11
July, 1979

JANE B. SODER

OFFICE OF PLANNING AND BUDGET
R.W. Wilkinson, Jr.
Executive Director

DEPARTMENT OF PLANNING, RESEARCH, AND EVALUATION
Susan Stier, Director

OFFICE OF INSTRUCTION PROGRAM EVALUATION/TESTING
David G. Colwell, Jr., Supervisor

Prepared by:

Jane B. Soder

Jane B. Soder
Evaluator, Tests and Measurements

Approved by:

David H. Hoffman, Supervisor

David G. Colwell, Jr., Supervisor

Susan Stier, Director

ABSTRACT

Mastery of sixteen "life skills" tasks will be a Seattle Public Schools graduation requirement beginning in 1981. Five forms of the Minimum Competencies Performance Test, which will be used to measure mastery of those tasks, are presently being developed and field tested. This report presents the results of the analysis of the first field test.

The five forms of the test as a whole have high internal consistency, are stable, and are moderately equivalent to one another. The fourteen individual competencies measured by each form are not as internally consistent, nor are they as stable or as equivalent from form to form. Some items need to be replaced in order to improve the reliability and equivalency of both the total test and the individual competencies. If demonstration of mastery of all fourteen competencies becomes the graduation requirement, the number of items measuring each competency should be increased.

The results of this analysis were used in the development of the revised version of the Minimum Competencies Performance Test used for the Spring, 1979 field test.

TABLE OF CONTENTS

	Page
ABSTRACT	ii
LIST OF TABLES	iv
INTRODUCTION	1
A DESCRIPTION OF THE TEST.	3
THE FIELD TEST SAMPLE.	5
ANALYSIS OF THE TEST	7
THE TEST ITEMS	7
SCORE DISTRIBUTIONS	7
EQUIVALENCY	8
RELIABILITY AND DISCRIMINATION.	8
ETHNIC AND SEX BIAS	9
THE TOTAL TEST OF 44 ITEMS	10
SCORE DISTRIBUTIONS	10
EQUIVALENCY	10
RELIABILITY	12
VALIDITY.	14
ETHNIC AND SEX BIAS	15
THE 14-COMPETENCY TEST	16
SCORE DISTRIBUTIONS	16
EQUIVALENCY	17
RELIABILITY	17
ETHNIC AND SEX BIAS	17
THE COMPETENCIES AS SEPARATE TESTS	17
SCORE DISTRIBUTIONS	18
EQUIVALENCY	18
RELIABILITY	18
ETHNIC AND SEX BIAS	19
FACTOR ANALYSIS	20
SUMMARY AND CONCLUSIONS.	23
RECOMMENDATIONS.	27

Page

APPENDIX I

GRADUATION REQUIREMENTS AND MINIMUM COMPETENCIES. 31

APPENDIX II

A NOTE ON RELIABILITY 33

LIST OF TABLES

Page

TABLE 1. COMPETENCIES MEASURED AND NUMBER OF ASSOCIATED ITEMS. 35

TABLE 2. HIGH SCHOOLS AND NUMBER OF STUDENTS PARTICIPATING 36

TABLE 3. ETHNIC DISTRIBUTION - DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS 37

TABLE 4. SEX DISTRIBUTION - DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS 37

TABLE 5. DISTRIBUTUION OF LIVING SITUATION - DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS. 38

TABLE 6. TASK SCORES FOR DISTRICT AND FIELD TEST GROUP 38

TABLE 7. TASK SCORES FOR DISTRICT AND FIELD TEST GROUP BY SEX AND ETHNIC STATUS 39

TABLE 8. PROPORTION CORRECT FOR EACH ITEM (*P* VALUE) BY FORM. 41

TABLE 9. ITEM-TOTAL CORRELATIONS - CORRELATIONS BETWEEN PASSING ITEM AND PASSING TEST - BY FORM 43

TABLE 10. ITEM DATA 45

TABLE 11. SUMMARY STATISTICS OF TOTAL SCORES - BY FORM. 47

TABLE 12. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - BY FORM. . . 48

TABLE 13. TEST-RETEST AND INTER-FORM DATA 49

TABLE 14. TEST-RETEST AND INTER-FORM DATA - PERCENT PASSING EACH FORM IN FORM PAIRS 50

TABLE 15. TEST-RETEST AND INTER-FORM DATA - PERCENT PASSING ONE FORM ALSO PASSING THE PARIED FORM 51

TABLE 16. TEST-RETEST AND INTER-FORM DATA - PERCENT FAILING ONE FORM ALSO FAILING THE PAIRED FORM 51

TABLE 17. RELIABILITY COEFFICIENTS (KR-20) BY FORM. 52

TABLE 18. CORRELATIONS BETWEEN MINIMUM COMPETENCIES PERFORMANCE TEST AND SUBTESTS OF THE TASK - BY FORM 52

TABLE 19. MEAN NUMBER OF ITEMS PASSED BY SEX - BY FORM. 53

TABLE 20. MEAN NUMBER OF ITEMS PASSED BY ETHNIC STATUS - BY FORM. 53

TABLE 21. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - FORM A - BY ETHNIC STATUS 54

TABLE 22. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - FORM B - BY ETHNIC STATUS 55

TABLE 23. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - FORM C - BY ETHNIC STATUS 56

List of Tables (continued

Page

TABLE 24. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - FORM D - BY ETHNIC STATUS 57

TABLE 25. CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES - FORM E - BY ETHNIC STATUS 58

TABLE 26. MALE STUDENTS' MEAN RAW SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN RAW SCORES - FALL, 1977 TEST OF ACADEMIC SKILLS 59

TABLE 27. MALE STUDENTS' MEAN SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN SCORES - FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST - BY FORM 59

TABLE 28. NON-WHITE STUDENTS' MEAN RAW SCORES AS PROPORTION OF WHITE STUDENTS' MEAN RAW SCORES - FALL, 1977 TEST OF ACADEMIC SKILLS 60

TABLE 29. NON-WHITE STUDENTS' MEAN SCORES AS PROPORTION OF WHITE STUDENTS' MEAN SCORES - FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST - BY FORM. 60

TABLE 30. SUMMARY STATISTICS OF COMPETENCY SCORES - BY FORM 61

TABLE 31. DISTRIBUTION OF NUMBER OF COMPETENCIES PASSED - BY FORM 62

TABLE 32. CUMULATIVE PERCENTAGE DISTRIBUTION OF NUMBER OF COMPETENCIES PASSED - BY FORM 63

TABLE 33. INTER-FORM AND TEST-RETEST CORRELATIONS FOR COMPETENCY SCORES . . 64

TABLE 34. RELIABILITY COEFFICIENTS (KR-20) AND ITEM-TOTAL CORRELATIONS WITH COMPETENCIES AS "ITEMS" IN A 14-ITEM TEST. 65

TABLE 35. MEAN NUMBER OF COMPETENCIES PASSED BY ETHNIC STATUS BY FORM 66

TABLE 36. MEAN NUMBER OF COMPETENCIES PASSED BY SEX - BY FORM 66

TABLE 37. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - ALL FORMS COMBINED - BY ETHNIC STATUS. 67

TABLE 38. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - BY SEX - ALL FORMS. 68

TABLE 39. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM A - BY ETHNIC STATUS 69

TABLE 40. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM B - BY ETHNIC STATUS 70

TABLE 41. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM C - BY ETHNIC STATUS 71

TABLE 42. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM D - BY ETHNIC STATUS 72

TABLE 43. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM E - BY ETHNIC STATUS 73

TABLE 44. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM A - BY SEX 74

List of Tables (continued)

Page

TABLE 45. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM B - BY SEX. 75

TABLE 46. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM C - BY SEX. 76

TABLE 47. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM D - BY SEX. 77

TABLE 48. PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED - FORM E - BY SEX. 78

TABLE 49. MALE STUDENTS' MEAN COMPETENCY SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN COMPETENCY SCORES - BY FORM. 79

TABLE 50. NON-WHITE STUDENTS' MEAN COMPETENCY SCORES AS PROPORTION OF WHITE STUDENTS' MEAN COMPETENCY SCORES - BY FORM. 79

TABLE 51. PERCENT PASSING EACH COMPETENCY - BY FORM. 80

TABLE 52. INTER-FORM DATA ON COMPETENCIES - PERCENT PASSING EACH COMPETENCY FOR THE FORM PAIRS 81

TABLE 53. INTER-FORM DATA ON COMPETENCIES - PASS-FAIL CORRELATIONS (PHI) ON COMPETENCIES 82

TABLE 54. INTER-FORM DATA ON COMPETENCIES - PERCENT PASSING COMPETENCY ON ONE FORM ALSO PASSING THE COMPETENCY ON THE PAIRED FORM. 83

TABLE 55. RELIABILITY COEFFICIENTS FOR EACH COMPETENCY AND FOR THE TOTAL TEST BY FORM 84

TABLE 56. ITEMS WHICH SERIOUSLY DETRACT FROM THE RELIABILITY OF THEIR ASSOCIATED COMPETENCIES. 85

TABLE 57. TEST-RETEST DATA ON COMPETENCIES - PERCENT PASSING EACH COMPETENCY, TEST-RETEST. 86

TABLE 58. TEST-RETEST DATA ON COMPETENCIES - PASS-FAIL CORRELATIONS (PHI) ON COMPETENCIES. 87

TABLE 59. TEST-RETEST DATA ON COMPETENCIES - PERCENT PASSING COMPETENCY AT FIRST TEST ALSO PASSING THE COMPETENCY ON THE RETEST. 88

TABLE 60. PERCENT PASSING EACH COMPETENCY - BY SEX - FORM A. 89

TABLE 61. PERCENT PASSING EACH COMPETENCY - BY SEX - FORM B. 90

TABLE 62. PERCENT PASSING EACH COMPETENCY - BY SEX - FORM C. 91

TABLE 63. PERCENT PASSING EACH COMPETENCY - BY SEX - FORM D. 92

TABLE 64. PERCENT PASSING EACH COMPETENCY - BY SEX - FORM E. 93

TABLE 65. PERCENT PASSING EACH COMPETENCY - BY ETHNIC GROUP - FORM A 94

TABLE 66. PERCENT PASSING EACH COMPETENCY - BY ETHNIC GROUP - FORM B 95

TABLE 67. PERCENT PASSING EACH COMPETENCY - BY ETHNIC GROUP - FORM C 96

TABLE 68. PERCENT PASSING EACH COMPETENCY - BY ETHNIC GROUP - FORM D 97

List of Table (continued)

Page

TABLE 69. PERCENT PASSING EACH COMPETENCY - BY ETHNIC GROUP - FORM E 98

TABLE 70. SUMMARY OF FACTOR ANALYSIS - ITEMS IN COMPETENCIES WHICH LOADED ON SAME FACTOR 99

INTRODUCTION

Beginning with the graduating class of 1981, all students must master sixteen "life skills" tasks[1] to receive a diploma from Seattle Public Schools. That graduation requirement may be filled either by passing a test designed to measure competency in those tasks or by passing a course of instruction in those tasks. The "Minimum Competencies Performance Test" is being developed to measure competency in those tasks. Because this test will be of great importance to Seattle students, it is essential that it be as reliable and as valid and as free of ethnic and sex bias as possible. Five forms of the test are being developed, and it is imperative that these different forms be equivalent to one another, so that different forms can be used in different years and for students who take the test more than once.

In order to develop a test that fits those specifications, a series of three field tests will be conducted, with the test being changed and improved after the results of each field test are analyzed. This report is a presentation of the results of the first of those field tests. Preliminary results from this field testing have been discussed with and used by those engaged in modification of the test for the second field test session.

Analysis of these results shows that the District has developed five reliable forms of the test, moderately equivalent to one another. Each has some items that need revision or replacement. Measurement of the individual competencies (the basic tasks) does not fare as well as the test as a whole. There are not enough items measuring some of the competencies; the items intended to measure some competencies do not appear to be measuring the same thing; and some competencies are not equivalent from form to form. The deficiencies of the test can be remedied. By spring of 1980, when it will be given to all grade 11 students to satisfy graduation requirements, the test will have been revised and improved considerably.

[1] An excerpt from the official graduation requirements regarding minimum competencies and a list of the sixteen basic tasks are contained in Appendix I.

A DESCRIPTION OF THE TEST

The five forms of the Minimum Competencies Performance Test each contain 44 items measuring fourteen of the sixteen tasks which must be mastered by all those who graduate from Seattle Public Schools. Two of the tasks are not measured by the test. These are:

Task 12 - The student will be able to use the basic units of English and metric measurement.

Task 14 - The student will be able to give a clear and simple oral direction.

The former will be considered "mastered" along with mastery of other competencies involving arithmetic skills. Mastery of the latter will be certified through teacher judgment.

The fourteen competencies (tasks) measured by the test and the number of items intended to measure each are listed in Table 1. All but two competencies are measured by multiple choice items with five response choices each. Competency 1, "The student will be able to complete forms such as job applications, voter registration, ballots and written tests, such as driver's licence test" is measured by having the students complete such a form. Competency 11, "The student will be able to write simple business letters and informal letters" is measured by having the students write such a letter. Both these competencies are scored "pass" or "fail" based upon multiple-point evaluations.

Because the five forms of the test are intended to be equivalent, corresponding items were written for each form. For example, the "Recipes" competency is measured by three items on each form. The items were written so as to be similar in structure and difficulty from form to form, varying only in content.

The items in the test were designed to depict real life situations as much as possible. In many cases, actual classified ads, timetables, dictionary pages, etc. were reproduced as part of the test item. As the test is intended to measure practical skills, it is very different in form and content from most achievement or aptitude tests given to high school students.

THE FIELD TEST SAMPLE

Twelfth grade students in six high schools participated in the Fall, 1978 field test. The schools and the numbers of students participating are listed in Table 2. All twelfth grade students in these schools were asked to participate, but because the test could not be given in regular classes, not all students co-operated. A large enough sample for adequate analysis was obtained, however, and those students participating were fairly representative of twelfth grade students in the District.

Because there were five forms of the test, and the equivalency of these forms was to be measured, there were two administrations of the test two weeks apart. Students were randomly assigned to test forms at each administration, so that each possible combination of form pairs would be administered to sizable numbers of students. Thus, some students took the same form at both administrations, and their tests were used for test-retest analysis of each form. Some students took two different forms, and their tests were used for inter-form analysis. Both tests taken by students taking two different forms and the first of the tests taken by students taking the same test twice were used in the item analysis and the analysis of the forms as separate tests.

The six high schools chosen for participation in the field test were selected in such a combination that would maximize the representativeness of the sample to the District as a whole at that grade level. The goal was to obtain a sample that would be very close to the District twelfth grade in ethnic and sex distribution, distribution of living situation, and level of academic achievement.

As can be noted from Table 3, the ethnic distribution of the twelfth grade in the six high schools in the field test sample is almost identical to that of the District. There is a smaller percentage of American Indian students in the field test schools than in the District as a whole, and these students were underrepresented among field test participants also. All other ethnic groups were represented in the field tesitng approximately in proportion to their numbers in grade 12 of the District. Again with the exception of American Indians, all ethnic groups were adequately represented among those taking each of the five forms of the test.

The six field test schools have about the same sex distribution as does the District, but more women than men participated in the testing. These figures are given in Table 4. More women than men took every form of the test except Form D. Adequate numbers of both sexes took all forms, however. The field test schools and participants have a slightly higher proportion of students living with both parents, as shown in Table 5. This varies some among the forms, but for all five the percentage is higher than it is for the District as a whole.

As shown in Table 6, mean scores on the Test of Academic Skills (TASK) were somewhat higher for the schools and students who participated in the field test than for the District as a whole. The differences are not large-up to 5 percentile points on subtest scores. Variation among students taking different forms of the test is even less-up to 3.4 percentile points.

Field test participants of both sexes and of every ethnic status except "Black" had higher mean TASK scores than their counterparts in the District as a whole. TASK scores of Black participants were about the same as those in the total District. These data are presented in Table 7.

The students participating in the field test were similar to those who will take the test for graduation certification. Because the achievement test scores of those who volunteered were slightly higher, on the average, than those of their classmates, performance on the test during this field testing session may have been somewhat better than it would have been had all students at a grade level taken the test. However, this slight deviation from representativeness is not serious enough to affect the analysis of the test.

ANALYSIS OF THE TEST

The analysis of the five forms of the Performance Test was conducted in three ways:[2]

1) As a total test with 44 items

2) As a test with 14 items; each competency (task) treated as a single item

3) As a series of 14 tests; each competency (task) considered as a separate test with only a few items.

Because there are five forms of the test, each of these forms was analyzed in all three ways. For each of the three ways of looking at the test, the analysis included, where appropriate, the distributions of scores, the equivalency of the five forms, reliability, validity, and ethnic and sex bias. The individual items on all five forms were also examined as to their score distributions, inter-form equivalency, reliability, discrimination, and ethnic and sex bias. The discussion of the item study is presented in the section below, followed by discussions of the test itself analyzed three ways, in the order listed above.

The Test Items[3]

Score distributions. Table 8 contains a list of the test item numbers and the proportion of the field test sample answering each item correctly on each of the five forms. Some of the items are very easy; close to 100% answered them correctly. The retention of such items in a test of this type may be justified for at least two reasons. First, some of the competencies measured may be tasks that, while important, are not difficult; that virtually everyone has mastered by the time they are in high school. Second, in order to minimize test anxiety, a test used to fill a graduation requirement should include some very easy questions which will boost the students' confidence and help them to do their best on the entire test. There are enough more difficult items on this test to obtain a variance in total scores sufficient for high reliability coefficients and adequate discrimination among students' abilities.

As shown in Table 8, only 7% of the students answered Item 5 on Form C correctly. Examination of this item and the response choices revealed that the item was indeed ambiguous, and that those who answered it incorrectly chose a reasonable

[2]For a discussion of why the analysis was conducted in these ways, see Appendix II, "A Note on Reliability."

[3]A scoring error caused students' response to Item 24 to be read as their response to Item 19, as well as for Item 24. Therefore no data are available for Item 19.

response. That item was changed for the form of the test used in the Spring, 1979 field test.

Equivalency. If alternate forms of a test are to be highly correlated, the difficulty level of the parallel items of all forms must be about the same. As shown in Table 8, there are several items on each form with P values (percent answering correctly) quite different from the corresponding items on other forms. Many of these were changed for the Spring, 1979 version of the test, and consequently, the inter-form correlations should be higher in that version.

Reliability and discrimination. Correlations between passing or failing each item and the total test score are listed in Table 9. These are indications of the items' contributions to the internal consistency and discriminatory ability of the total test. Item-total correlations of between .20 and .40 are usually considered adequate, and the inclusion of a few items with lower correlations does not seriously detract from the test's value.

Low item-total correlations are sometimes the result of high P values. When very few students miss an item, it is very possible that those who do miss it miss it by chance, and that answering that item correctly or incorrectly is not related to their total score. The result is a very low item-total correlation. Several of the low item-total correlations for this test are for items with high P values. As discussed previously, a certain number of very easy items may be desirable on a test of this type. The associated low item-total correlations and their effect upon estimates of reliability may have to be tolerated. As can be seen in Tables 8 and 10, a few of the items with very high P values detract slightly from the reliability of the test forms.

Item 5 on Form C had a negative correlation with the total test. As indicated earlier, this item was changed for the Spring, 1979 form of the test.

On the right-hand side of Table 9, Phi coefficients are presented. These are the correlations berween passing or failing each item and passing or failing the total test. Because a pass-fail cutoff point for this test has not yet been set, it was arbitrarily set at 70%. These coefficients should be considered illustrative only, and might be quite different with another pass-fail cutoff. The Phi coefficient is an indication of the discriminatory power of an item. When the Phi coefficient for an item is high, most people who answer that item correctly also pass the test. Those who fail the test usually miss that item. The Phi coefficients for most items on the Performance Test are high enough to indicate that the items are contributing to the discriminatory power of the test (at the arbitrary 70% cutoff point). These coefficients can also be attenuated because of high P values for the items, and again, a few lower Phi's may be a necessary byproduct of a test with some very easy items.

Table 10 contains several kinds of negative information about some of the items. In the first column, those items which actually detract from the internal consistency of the test are indicated. These are items which, if deleted, would result in a test of higher reliability (as measured by KR-20) even though the resulting test would be one item shorter.[4] It is notable that there are only

[4] KR-20 (Kuder-Richardson-20) is Coefficient Alpha for a test made up of items with only two values; i.e., correct or incorrect. This coefficient is the standard measure of the internal consistency of a test, and is computed from the correlations of the items with each other. The reliability of the total test and of the 14 competencies will be discussed in later sections.

twelve such items out of the 215 total items on the five forms. Also, the change in KR-20 that would result from deletion of these items is very slight in every case. Almost all the items are contributing to the internal consistency reliability of the total test.

The second column of Table 10 contains the same kind of information about the items as the first column, except that it is reliability of the competency (task) associated with each item that is considered rather than total test reliability. This column indicates items which, if deleted, would result in higher KR-20's for their associated competencies. There are only sixteen such items, not many considering there are fourteen competencies on each of the five forms, or 70 competencies altogether.

In the next column are indicated those items for which one particular incorrect response was chosen by most of those who missed the item. Ideally, each incorrect response would be chosen equally. This ideal is seldom achieved, but careful item writing can result in well-balanced response choices. The response choices for the most disproportionate of these items have been changed for the Spring, 1979 version of the test.

Ethnic and sex bias. The last two columns of Table 10 contain references to those items for which an indication of possible sex or ethnic bias was obtained. The items indicated are those which were found to have P values for the sex or ethnic groups more divergent than the score differences on the test as whole. Thus, if 68% of the women students and 97% of the men students answered a particular item correctly, that item would be included in the last column as having possible sex bias. Since for the total test, men's and women's scores were about the same, that item would discriminate in favor of men more than did the total test. Whether or not the item is actually biased against females would have to be determined by other means. Items not indicated in these columns discriminate among the sex and ethnic groups no more than does the test as a whole.

Clearly, items could be biased and not appear in this table. It would be quite possible for the whole test to be biased against non-whites, for example, but with no particular item being more biased than the others. Other means of determining sex or ethnic bias should be employed as well. The use of a review panel will be discussed in another section.

Conversely, it is possible for an item to appear in one of these columns and not be biased. If an item discriminates more among groups than does the total test, there might be bias in the item. Equally plausible is that there could be bias in the competency, bias in the curriculum or educational process, or bias in "life." For example, if more men missed a "recipe" item than women, the item might have been written in langauge more familiar to women than men -- bias in the item. Or, perhaps facility with recipes is not a necessary life skill for men, and therefore should not be included in this test -- bias in the competency. Alternatively, home economics may have been required or encouraged for women, but not men, in their earlier schooling -- bias in the curriculum. Another possibility would be that boys and men who enjoy cooking might be laughed at or looked down upon -- bias in life. Any one of these situations could result in a recipe item discriminating against men. In only one case would the bias be in the item.

The immediate objective is to make this test and all of its items free from ethnic or sex bias. Concurrently, the competencies should be reviewed to be sure they are not biased. Seattle Public Schools' curriculum and instruction should be continually monitored with the goal of ridding them of ethnic and sex bias. The influence of the schools on society is certainly not negligible. Perhaps even the bias in "life" can be diminished.

Some of the items which were indicated as possibly biased were changed for the Spring, 1979 version of the test. Others were not, however, because inspection of the items did not reveal any reason why they would be biased. Clearly, more work must be done to ensure that the test is free of ethnic and sex bias before it is used as a means of filling a graduation requirement.

The Total Test of 44 Items[5]

Score distributions. The five forms of the Minimum Competencies Performance Test proved to be relatively easy tests, with high distributions of scores. The mean and median scores and the standard deviations of scores on the five forms were about the same, as shown in Table 11. Form C had the lowest mean and median scores, but this form had one very poor item (discussed above) that 93% of the students missed. Since no more than 4% missed the corresponding item on the other forms, if an equivalent item had appeared on Form C, the mean and median scores for this form would have been about one point higher, thus making the five forms even closer together in scores.

Table 12 presents the cumulative percentage distribution of total scores for each form of the test. For every possible total score, the figures in the body of the table indicate the percent who scored at that level or lower. This table provides not only a more detailed description of score distributions than does Table 11, but also an indication of the percentages of students who would fail the test at any given cutoff point. The information presented in Tables 11 and 12 shows that although the distributuions of scores were similar for the five forms, Form A had the highest scores and Form C the lowest.

Equivalency. The Minimum Competencies Performance Test will be given to all students in the spring of their junior year. Those students who do not pass the test will have further opportunities to take the test during their senior year. Alternate forms of the test must be available for students taking it more than once, and so that different forms can be given in different years. Therefore, five forms of the test are being developed with the goal of making them as equivalent as possible. To be perfectly equivaletn, two forms of a test, when given to the same set of students, would have equal means, medians and standard deviations, and a correlation of 1.0. This could be accomplished only by every student achieving the same score on one form as on the other. In practice, this can only be approxi-

[5]The analysis in this section was completed before the scoring error described in footnote 3 was detected. The decision was made not to repeat the analysis with the omission of Item 19. This decision was made because it was determined that the statistics including Item 19 as part of the total test would be only very slightly different if Item 19 were omitted. The differences would not, in any case, be statistically significant or large enough to cause changes in any of the findings or conclusions. The additional cost in computer and staff time, on the other hand, would be considerable.

mated, not only because exactly equivalent tests are very difficult to construct, but because of measurement error in the obtained scores.

The lower portion of Table 13 contains inter-form data on the ten combinations of the five forms of the test. Statistics for each form pair are based only on scores of students who took both forms in the pair. As can be seen from the table, the means, medians, and standard deviations of the two tests in the form pairs are generally within one or two points of one another. The tests in the A-C pair diverge the most, but if Form C had not contained the one poor item, these two forms would have been more equivalent.

The correlations between forms are moderate to high, ranging from .54 to .82. Inter-form correlations in the .70's and .80's are acceptable, but tests with correlations much lower probably should not be used as alternate forms of the same test, especially for such an important purpose as filling a graduation requirement. Hopefully, the replacement and modification of some items will result in higher inter-form correlations in later versions of the test.

For a criterion-referenced test where the important decision to make is mastery or non-mastery, it is of the utmost importance that the same decision would be made for every student by using any form of the test. Thus, it is more important that the distribution of scores include the same percentages of students above and below the cutoff point than that the mean, median, and standard deviation be the same. The relationship between passing (or failing) one form and passing (or failing) the other is more important than the correlation of the whole distribution of scores on the two forms. Thus, with perfectly equivalent forms of criterion-referenced tests where the critical measurement is mastery or non-mastery, every student would either pass both forms or fail both forms. The number of points they scored above or below the cutoff point would not be important.

The policy decision has not yet been made as to how students will have to perform on the Minimum Competencies Performance Test in order to satisfy graduation requirements. If the policy is that students must pass a certain number of items on the test, then some important information about the equivalency of the five forms can be obtained from Table 12. Wherever the cutoff point is set, the percent above and below that point can be determined for each of the five forms. It should be noted that this table includes data on all students who took each form, not just those who took a particular form pair, as does Table 13. However, because the students taking the five forms were selected at random, and because the groups are similar in their ethnic and sex distributions and median TASK scores, they can be considered equivalent groups.

If the pass-fail cutoff were at 70%, or 31 correct items, then 11.2% would have failed Form A and 18.9% Form C, with intermediate percentages failing Forms B, D, and E. The choice of a 70% cutoff point was strictly arbitrary, and was used for illustration purposes only. By examining the table, though, one can see that no matter what cutoff point was set, different percentages of students would have failed the different forms. This is a fairly serious problem, which will hopefully be remedied by changing some items whose P values varied from form to form.

The percent passing (at an arbitrary 70% score) each of the forms in all form pairs are given in Table 14. This table is based only on the scores of those taking these specific form combinations. Most of the percentages in the pairs are 5 or 6 or fewer points apart, but there is a 15 percentage point difference between Form A and Form C. This is clearly too large a difference for test forms intended to be equivalent.

The correlations between passing and failing the test for the form pairs are given in Table 13. The statistic used is the "Phi" coefficient, which is the product-moment correlation for variables with only two values each. Again, the pass-fail cutoff point was arbitrarily set at 70%, and these coefficients might be very different with different cutoff points. With one exception, Phi is lower than r, the correlation between the whole distributions of scores in the pairs. This is partly because of the restriction in range and the additional measurement error resulting from dichotomizing continuous variables. The skewed distribution of passing or failing, with only a few students scoring below 70%, also acts as a constraint on the value of Phi. Still, these relatively low Phi coefficients should be considered a serious problem in a test designed to measure mastery or non-mastery. If the pass-fail cutoff point was actually set at 70%, most of these form pairs could not be considered equivalents.

The percentages of those who passed one form of the test who also passed the other in the pair are given in Table 15, and the corresponding percentages for those failing the test appear in Table 16. Again, these percentages are based on a strictly arbitrary cutoff point of 70%. For perfectly equivalent criterion-referenced tests, these figures would all be 100%. As shown in the table, the "pass-pass" percentages are generally high; most above 90%. The "fail-fail" percentages are lower and more variable. This is primarily due to the small number of students "failing" the test. When the number who fail a form is small, and a few of those students pass its paired form, those students make up a large percentage of the total number failing the first form.

The changes in items after the fall field testing should make the five forms more equivalent. Hopefully, most "pass-pass" percentages in the final form of the test will be 95% or higher.

The five forms of the Minimum Competencies Performance Test are moderately equivalent to one another with inter-form correlations of .54 to .82 for the ten pairs of forms. The distributions of scores are similar, with mean and median scores only one or two points apart in the form pairs. Pass-fail correlations are only moderate. The percentages passing one form who also passed the paired form are fairly high but should be higher. Although most students who pass one form of the test would also pass another form if that form were taken instead, the percentages that would fail one form and pass another are too high. It is those marginal students -- those who have neither obviously mastered nor obviously not mastered the competencies -- that this test should be directed toward and made to discriminate among. Pass-fail equivalency of the forms must improve as the test is refined and developed.

Reliability. When classical reliability techniques are applied to the total test of 44 items, high reliability coefficients (.87 to .90) are obtained on all forms. The Kuder-Richardson-20 Coefficients (KR-20) for each form are presented in Table 17. KR-20 coefficients between .87 and .90, as were obtained on the five forms of the Performance Test, indicate that the items of the test are measuring something consistent. Students who do well on one random subset of items in the test do well on other subsets also. There is a general factor in the test which the items measure. We would hope the general factor in this case is "minimum competencies," but whether or not that is what it is depends upon the validity of the test, not its reliability or consistency.

As discussed in Appendix II, a criterion-referenced test such as this Performance Test might not have a high reliability coefficient because limited variance attenuates the correlations upon which the reliability coefficient is based. Low reliability coefficients might also be expected because fourteen separate competencies are measured by the test. The items in these fourteen competencies might well be correlated with others measuring the same competency but uncorrelated with items measuring other competencies. Neither of these conditions which could restrict reliability are operative for the Performance Test. The variability in item scores is great enough to permit high correlations, and the items are correlated between, as well as within, competencies.

The stability of a test is another important aspect of its reliability. It is important that the same results are obtained from a test like this no matter when it is administered, as long as no content learning has occurred during the time period involved. Test stability is measured by the correlation of the two sets of scores obtained when a group of students take the test twice, separated by a period of time. Test stability may be obscured by learning or practice effects. Students may do better on a test the second time because they have learned some of the test content between test administrations, or simply because they are more familiar with the test's structure and content from having taken it once before.

Part of the field test group took the same form of the Minimum Competencies Performance Test at both test administrations. Although there could be some practice effect, the learning effect is probably negligible, as it is doubtful that the test content would be taught in the high schools to any great extent during the two-week period between test administrations. The test-retest correlations, which are presented in the top part of Table 13, are assumed to be a good indicator of the stability of each of the forms. These correlations range from .62 to .85 for the five forms, and except for the Form E correlation of .62, are moderately high. Form E's test-retest correlation is not high enough for a test of this importance, and should be improved before that form is used for graduation certification.

Table 13 also includes the means, medians, and standard deviations of the test-retest groups on each form. Most of these statistics are very close for the two administrations of the tests; less than one point apart. This is another indication of test stability. The lack of change in mean scores is an indication that learning and practice effects were negligible.

The test-retest Phi coefficients for the five forms are also given in the top part of Table 13. These are the correlations between passing or failing the test at the first administration and passing or failing it at the second. Again, because a pass-fail cutoff point has not been set for this test, the Phi coefficients were computed on the basis of an arbitrarily set cutoff of 70%. These coefficients should be considered illustrative only. If 70% were the actual cutoff score, these coefficients would be much lower than desirable. The test-retest Phi's of .29 and .38 for Forms C and E respectively are not acceptable. Those of .63 to .73 for the other forms are marginal.

The percentages passing (at 70%) each form at the two test administrations are given in Table 14. This table includes scores of students who took the same form of the test twice. The differences in percent passing it the two times are larger for Forms A and B than would be expected from the very small difference in median scores. Tables 15 and 16 provide more information about the pass-fail stability of the forms. The diagonals in the bodies of these tables are

percentages of those who passed (Table 15) or failed (Table 16) the form the first time who also passed (failed) it the second time. Again, the pass-fail cutoff point was arbitrarily set at 70%. Ideally, these would all be 100%. Every student who passed the test the first time would pass it again the second time, and every student who failed it the first time would also fail it upon retest.

The pass-pass percentages are high, except for Forms C and E. Only 86% of those who passed Form C the first time they took it also passed that same form the second time it was taken. This is not at all high, considering that 80% of all students who took it "passed" Form C. The 91% pass-pass percentage for Form E is low also, considering that 88% of all students who took the form passed Form E.

The test-retest "fail-fail" percentages in Table 16 are lower, but since only 11% to 19% of all students "failed" these forms, the 43% to 60% figures, while far from ideal, are not totally unacceptable, either.

Validity. Content validity is the type of validity upon which the Minimum Competencies Performance Test is based. The two major factors in content validity are 1) a representative collection of items, and 2) a good method of test construction.[6] The test was constructed by first establishing the competencies and then writing items to measure each competency for the five forms. The test was constructed by a panel of teachers and curriculum specialists, advised by a testing specialist. The panel agreed that every item written and selected for the test measured the competency it was intended to measure.

The Performance Test is intended to measure minimum mastery of certain life skills. As such, it might not be highly correlated with other tests taken by high school students, which are intended to measure quite different things. Unfortunately, data are not available for computing correlations between this test and the Minimum Competencies Screening Test, taken in grade 9, which might be expected to measure similar attributes. These correlations will be computed for those taking the Performance Test in the future.

The Test of Academic Skills (TASK) given to all grade 11 students is a measure of achievement in the basic skills of Reading, English, and Mathematics. This is not the same thing as mastery of life skills, but presumably a certain level of proficiency in those basic skills is needed for competency in life skills. If this is so, then moderate correlations between the Performance Test and the TASK would be expected. Moderate correlations are just what are found, as shown in Table 18. These correlations, mostly in the .60's for all three subtests and all five forms, show that the Performance Test measures something different from the TASK, but that there is a general factor in both tests. The Performance Test is related to all three TASK subtests - Reading, English, and Math - to about the same degree, indicating, perhaps, that basic proficiency in all three of those areas is needed for competency in life skills as measured by the Performance Test.

There are additional things that need to be done in order to ensure the validity of the Performance Test. The face validity of the test should be determined. This means simply to have people read the competencies and the items and to state

[6] Nunnally, Jum C., Psychometric Theory, Second Edition. McGraw-Hill Book Company New York: 1978.

their opinions as to whether the items are indeed measures of the associated competencies, and whether the test as a whole is a measure of "minimum competencies." Face validity is probably more important for a test of a relatively new construct, such as "minimum competencies" than for a test of skills or abilities which have been measured by many tests over a period of years. Face validity is important for this test also because if students repeatedly fail the test and are not granted a diploma, the test will be scrutinized. It had better at least look like what it is purported to be.

The validity of the competencies themselves should be ascertained. Are they truly "essential to survival in the adult world?" A panel of educators and lay people should review those competencies to be sure this is so.

It is important that mastery of the competencies be established as a valid requirement for graduation. One prerequisite for this type of validity is that the competencies be taught at some point to every Seattle Public Schools student. A documentation should be made as to where in the K-12 curriculum instruction each competency is offered, and whether that instruction is geared toward all students or only a portion of them.

An indicator of content validity is a test's sensitivity to instruction. If students perform better on the test after taking a course in the areas the test is intended to measure, that is an indication that the test does measure those areas. This could be determined very neatly with the Performance Test by assigning a random half of those who fail the test this spring to a Minimum Competencies class. After the class was completed, all those who failed the test could be retested, and scores compared. This would be an important indicator of the content validity of the Performance Test and a trial run for the Minimum Competencies class as well.

Ethnic and sex bias. Tables 19 through 25 contain data on the field test performance of males and females and of students in the five major ethnic categories. As shown in Table 19, women students performed slightly better on all forms of the test than did men. The differences in mean scores were about one point or less. This is consistent with the better performance of women field test students on the Reading and English subtests of the TASK as indicated in Table 7.

White students scored highest on three forms of the test, while American Indian students scored highest on two. Because so few Indian students were included in the field test sample, however, their scores cannot be considered representative of Indian twelfth graders throughout the District. For the three ethnic groups with large enough numbers participating to allow generalization, the ranking of mean scores was the same for all five forms: White, Asian, Black. These data are presented in Table 20. Tables 21 through 25 are cumulative percentage distributions of total scores by ethnic group for each form. From these tables, estimates can be made of the percentages of students in each ethnic group who would fail the test at any given pass-fail point. Inspection of the tables shows that these relative percentages do vary considerably among the five forms of the test.

The differences in score distributions between males and females and among the five ethnic categories do not necessarily mean that the test is biased against either sex or against any ethnic group. There are many factors that could produce these differential results in this or any test. Determination of bias must be based upon means other than comparison of scores. However, some evidence bearing on this matter can be obtained by comparing the scores of the sex and ethnic

groups on different tests. An ethnic group might perform better relative to other ethnic groups on one test than another. This could be interpreted as evidence of less bias in one test than the other, although here, too, there are many other factors which might produce these results.

Comparisons of the relative scores of males and females and of the five ethnic groups on the Minimum Competencies Performance Test and the Test of Academic Skills are made in Table 26 through 29. Scores in these tables were computed as proportions of the mean scores of the highest scoring groups - females and white students.

As shown in Tables 26 and 27, the mean score of men students on the five forms of the Performance Test was about the same proportion of women students' mean score as it was on the Reading subtest of the TASK.

Non-white students generally scored better relative to white students on the Performance Test than on the TASK. This is especially true of Black students, whose mean scores on the five forms of the Minimum Competencies Performance Test varied from .81 to .87 of white mean scores. On the TASK subtests, these proportions were .59 to .73. These data are presented in Tables 28 and 29. This may be an indication of less ethnic bias in the Minimum Competencies Test than in the TASK, a standardized achievement test.

The individual items of the test were examined for possible sex or ethnic bias. This was discussed above in the section on "The Test Items." Before the Performance Test is used to fill a graduation requirement, further measures should be taken to ensure that the test is not biased against any group. People of both sexes and in the five ethnic categories should examine the items and the test as a whole for possible bias. Consideration should be given to including high school students in this group.

The 14-Competency Test[7]

Analysis of the Performance Test as a 14-item test, with the competencies considered as single items, has the effect of weighting the competencies (tasks), with their different numbers of items, equally. The number of items which should be answered correctly in order to demonstrate mastery of each competency was set (arbitrarily) so that each student could be assigned a "pass" or "fail" for each competency. The number of competencies passed could be considered a total score on the 14-item test.

Score distribution. Summary data on the performance of the field test students on the competencies are presented in Tables 30 to 32. The summary statistics in Table 30 do not vary much from form to form, with less than one point difference among the means and medians, and .3 point or less among the standard deviations. Modification of some items to make them more equivalent on the five forms should make these statistics even less variable.

A percentage distribution of number of competencies passed, and a cumulative percentage distribution of the competency scores are presented in Tables 31 and 32 respectively. Again, there is some variation among forms, which should be reduced in later versions of the test. An important point to note from these tables is that less than 14% of the field test students passed all fourteen competencies,

[7]Because of the scoring error indicated in footnote 3, Item 19 was omitted from the "Telephone Directory" competency in all analyses discussed in this section.

even on the easiest form of the test. This means that if these students had been required to demonstrate mastery of all competencies in order to fill a graduation requirement, 85% to 90% of them would have been unable to do so by taking this test once. And with the relatively high test-retest correlations, it is safe to say most would not be able to demonstrate such proficiency by retaking the test without specific instruction in the interim. If mastery of all competencies becomes the requirement, the test may appear to be easy, but will in reality be very difficult to pass.

Equivalency. Table 33 contains the inter-form correlations between each form pair. Again, the test is of 14 items, with the competencies considered as items. These correlations range from .44 to .77. Seven of the ten are moderately high, but those between Forms B and C, Forms A and E, and Forms C and E are too low. Hopefully all these correlations, and especially the three that are too low, will be increased as the items are made more equivalent in later versions of the test.

Reliability. The reliability of the 14-item test was investigated by computing KR-20 and test-retest correlations for each form. Even when the 14 competencies were treated as the test items, the internal consistency of the test was high, with KR-20's ranging from .70 to .77 for the five forms. These are high KR-20 coefficients for a test with so few items. Again the test as a whole proved to be fairly reliable.

The correlations of the 14 competencies with the total competency score are presented in Table 34, along with the KR-20 coefficients. These correlations are generally quite high, and show that most of the competencies are contributing substantially to the reliability of the test. Some item-total correlations are low, and in fact a few competencies are not contributing to the reliabilities of their test form. Deletion of these competencies would result in an increase in KR-20, although in all cases the increase would be minimal. The competencies which do not contribute to test reliability are indicated in Table 34. The number of these should be reduced as items are improved in later versions of the test.

Another measure of test reliability is the test-retest correlation. Competency scores of students who took the same form at both administrations of the test were used to compute these correlations, which are presented in Table 33. These correlations range from .57 to .81, and are considerably lower than the KR-20 coefficients in each case. The test-retest correlations for Forms D and E are low enough to be of concern.

Ethnic and sex bias. The relative performance of the sex and ethnic groups on the 14-competency test is portrayed in Tables 35 to 50. As comparison between Tables 49 and 50 and Tables 27 and 29 indicates, males and non-whites generally do not do quite as well compared to females and whites when the test is considered as a 14-item test with the competencies weighted equally. And as Table 37 shows, only 2% of the Black students passed all fourteen competencies compared to 14% of the white students. Only 7% of the men students passed all fourteen competencies compared to 16% of women students, as indicated in Table 38. If mastery of all fourteen competencies is required for graduation, the number of retests and the number of students taking Minimum Competencies classes would be quite large.

The Competencies as Separate Tests

Another way to analyze the Minimum Competencies Performance Test is to consider it not one test, but fourteen tests. Each competency, made up of from one to seven items, could be analyzed as a separate test. There is some justification for doing this with any criterion-referenced test measuring multiple objectives. This type

of analysis become imperative in a test where the emphasis is on mastery of each objective.

Score distributions. Table 51 lists the percent passing each competency by form. There are apparently considerable differences in the difficulty of the competencies, with almost all students passing some of them and less than 30% demonstrating the ability to write a business letter. There are also variations among forms for some competencies, which is of concern since the forms are intended to be equivalent measures of each competency. The forms should become more nearly equivalent as the test development progresses.

Equivalency. The equivalency of the separate competencies (tasks) from form to form was investigated. Data on each competency from students taking each pair of forms are presented in Tables 52 to 54. The percent of students in each form pair who passed each competency are shown in Table 52. If the test forms are to be used interchangably, and mastery of all sixteen competencies is required, then the percent passing a given competency should be equal (or nearly so) on the two forms in each pair. Most of the percent pairs are five points or less apart, but for some pairs the difference is much larger. These differences should be decreased in later versions of the test as individual items are made more equivalent.

Table 53 gives the Phi coefficient for each competency for each form pair. The Phi coefficient is a summary statistic for the relationship between passing or failing the competency on one form and passing or failing it on the paired form. Many of these are very low -- too low for equivalent forms of individual tests. If these coefficients are not increased considerably in later versions of the test, it would be unwise to use the test forms interchangably and depend upon the results as evidence of mastery of the individual competencies.

The percentages of students who passed the competency on one form who also passed it on the paired form are given in Table 54. Many of these are also too low for interchangable forms of separate tests. These should also be increased in later versions of the test.

When the individual competencies are considered separate tests, in many cases the forms are not equivalent. If mastery of all competencies becomes the graduation requirement, the forms should be made more equivalent if they are to be used interchangably.

Reliability. Table 54 presents the KR-20 coefficients for the eleven competencies that are measured by two or more items. The reliability coefficients for the total 44-item test are also given, for purposes of comparison. The astounding thing about these coefficients is that many are relatively high. The competnecies are measured by only two to seven items. Even a seven-item test is very short and high reliability coefficients are not to be expected.

While the reliability coefficients for the competencies are generally high for short tests, they certainly are not high for good tests. Some, like those for the "Money" competency, would be totally unacceptable if that competency were to be considered a separate test. Others would be considered "low to moderate." Only the 5-item "Check Verification" competency with its coefficients in the .70's and .80's could be considered reliable enough to stand alone. The reliability of these competencies could be increased by increasing the number of items. That will be imperative if demonstration of mastery of all fourteen competencies becomes the graduation requirement.

Three of the competencies are measured by only one item each. For one of these, "Oral Directions," this is a serious problem which should be rectified. For the other two, "Forms" and "Business Letter," reliable measurement is possible. For these competencies, the students are required to demonstrate mastery by filling out a form and writing a business letter. These are judged as "pass" or "fail" using a multi-point evaluation system. Reliability of these competencies could be adequately assessed with a measure of inter-rater agreement. Such a study will be conducted with the Spring, 1979 field test.

Some of the individual items detract from the reliability of their associated competencies. These items are indicated in Table 10. For a few of these, the effect of deletion would not be negligible. The items that substantially detract from the reliabilities of their associated competencies are listed in Table 56. Some of these have been changed for the Spring, 1979 field test. If mastery of all competencies becomes the graduation requirement, all these items should be modified or replaced.

The separate competencies were examined with test-retest data from students who took the same form at both administrations. Tables 57 to 59 report these data. The percent of students who passed each competency on the two administrations are indicated in Table 57. Ideally, these percentages would be the same at pretest and retest. Most are not, and some are up to 16 points apart. The majority vary by five percentage points or less, however. The correlations (Phi) between passing or failing each competency on the first administration and passing or failing it on the retest were computed and are displayed in Table 58. Most of these coefficients are moderate to low. The stability of the competencies considered separately is lower than desirable for individual tests. If mastery of all fourteen competencies becomes the requirement, these data should be kept in mind.

Attention should be directed to the Phi coefficients for the "Business Letter" and "Forms" competencies. On some forms, these are very low. The source of the instability from test to retest could be variation in students' performance on the two occasions, or it could be because different evaluators scored the items and inter-rater reliability was low. Inter-rater reliability will be studied in the Spring, 1979 field test.

The percents of those who passed each competency on the first administration who also passed it on the retest are given in Table 59. Most of these appear high, but when the high percentage of students passing some of the competencies are considered, they are really not high enough. Ideally, of course, all of these would be 100%.

Ethnic and sex bias. The relative performance of the ethnic and sex groups on each competency is presented in Tables 60 through 69. There was very little difference between men and women in mean number of competencies passed, but there were some interesting variations in performance on the individual competencies. On all but one form men performed better than women on the "Comparative Shopping" competency. Since grocery items were used as examples, these items could be considered biased in favor of women. The somewhat higher achievement of males in mathematics (as measured by the TASK) may have compensated for this bias, if it exists.

The "Recipes" competency may be one that is more easily mastered by women than men, given the sex role socialization in our society. Women students did perform better than men on this competency, even though the items involved math skills. Here it is the competency itself, not just the items, which should be examined for bias. If the District maintains that this skill should be mastered by all its graduates, then testing that competency can be justified even if women students have an advantage.

If this is the case, the District should be prepared to show that there is no discrimination against male students in access to home economics classes or in amount of encouragement to take those classes.

The "Advertising" competency items might be considered biased against women students because they involve advertisements for automobiles and tires. In this case, if sex bias were detected, the commodities advertised could be changed to something more neutral in relative appeal to men and women. However, on four out of five forms women performed better than men.

The largest differences in performance between men and women were on the "Forms" and "Business Letter" competencies. On both these competencies, women students performed substantially better than men. This difference cannot really be entirely explained by the somewhat higher achievement of women students in English (as measured by the TASK). It may be that this difference can be explained by the larger proportion of women students who take typing and other business classes where they are exposed to business letters and applications forms. If this is the case, the District should be prepared to show that males and females have equal access to business classes, and equal encouragement to take those classes.

Hispanic and, especially, Indian students did quite well on the Performance Test. However, the numbers of those students in the field test sample was not large enough to warrant generalization of their scores to their groups in the District as a whole. The following comparisons among ethnic groups are for only the three groups with a large enough number of participating students to warrant generalization; Asian, Black, and White.

Although for some competencies on some forms, Black or Asian students performed best, for most competencies, White students performed best, followed by Asians and Blacks. Black students scored highes on the "Oral Directions" competency on three out of five forms. Asians scored highest on three out of five forms of the "Newspapers" competency. On all other competencies, White students scored highest.

The presence or absence of ethnic bias in the competencies cannot really be determined by comparing the scores of students in the different ethnic categories. This could probably best be determined by review of the competencies by a multiracial panel, as discussed elsewhere.

Factor analysis. The competencies were also studied using factor analysis. Separate factor analyses were conducted on the items in each form of the test. The purpose of using factor analysis was to determine whether the items in each competency clustered together, and whether the items in different competencies appeared to be measuring somewhat different things. Ideally, the factor analysis for a test form would yield 14 factors, with each factor representing one of the 14 competencies. All of the items in a given competency would load high on a factor, and no other items would load high on that factor.

The five factor analyses did yield 12, 13 or 14 factors each, but these factors did not correspond neatly with the competencies. For some of the competencies, none of the items loaded on the same factor on some test forms, and for others, only part of the items loaded together. In some cases sets of items for two or more competencies loaded together, indicating that two or more competencies are measures of the same thing. The "Newspaper" and "Instructions" competencies loaded together on most of the forms, as did the "Check Verification" competency

and some items on the "Advertisement" competency. The items in competencies which loaded together are indicated in Table 70. The items enclosed in parentheses loaded together on a factor. For example, on Form D, items 4, 7, and 9 of the "Vocabulary" competency loaded on one factor, and items 5, 6, 8, and 9 loaded on another. This indicates that the items in the "Vocabulary" competency of Form D are to some extent measuring two different things, with item 9 measuring both.

Some interesting observations can be made from Table 70. Very few of the competencies and their associated items loaded consistently for the five forms. For example, all seven items in the "Vocabulary" subtest loaded together on Form E, but not on any other form. Competencies with some consistency across forms are "Schedules," "Instructions," and "Check Verification." On four forms all items in the "Check Verification" competency loaded together. On the fifth form, all the items loaded on one of two factors. For the "Instructions" competency, at least two out of three items loaded together on every form, and for three forms, all three items loaded on the same factor.

The "Schedules" competency is interesting because on every form, Items 14, 15, and 16 loaded on the same factor, but Items 17 and 18 did not load with them. Examination of the inter-item correlations shows that Items 14, 15, and 16 correlate highly with one another and have low correlations with Items 17 and 18. This is strong evidence that Items 14, 15, and 16 are measures of one factor (competency) and Items 17 and 18 of something else. The content of the items is different also. The first three items refer to an airline schedule and the last two to a bus schedule. The items referring to a bus schedule are much more difficult than the airline schedule items. The factor analyses should be studied further. Factor analyses of later versions of the test should be conducted and comparisons made to see if later versions more closely approach the ideal. This is one of the best ways to determine the degree to which items which are intended to measure a competency measure the same thing, and whether items in different competencies measure different things.

SUMMARY AND CONCLUSIONS

Twelfth grade students from six Seattle School District high schools participated in the field test of the Minimum Competencies Performance Test. Those participating were fairly representative of Grade 12 students in the District in terms of ethnic and sex distribution and level of academic achievement. Five forms of the test were administered, each containing 44 items, and measuring 14 competencies. The test was analyzed as (1) a 44-item test, (2) a 14-item test with each competency counted as an item, and (3) 14 tests with each competency considered a separate test. Each of these and the items themselves were studied, where appropriate, in terms of the score distributions, inter-form equivalency, reliability, validity, and ethnic and sex bias. Following are the major findings, based on those analyses.

The five forms of the test had high score distributions, with several easy items that almost all students passed. There was very little difference among the means, medians, or standard deviations from form to form.

There was variation in item difficulty, but all five forms included several very easy items. Items with difficulty levels quite different from the corresponding items on other forms were revised or replaced for the Spring, 1979 field test. These changes should result in greater overall equivalency among the test forms.

All forms included a large proportion of items with high item-total correlations and Phi coefficients (the correlation between passing or failing the item and passing or failing the test). Most of the items on all the forms do contribute to the reliability of their associated test form and competency.

Correlations between forms ranged from .54 to .82. Some of these need to be increased before the forms are used interchangably. Frequency distributions of each form's scores indicate that different percentages of students would fail the test depending on which form was used. Pass-fail correlations between forms (based on an arbitrarily set cutoff point of 70%) ranged from .46 to .75. Most of these would be too low for interchangeable tests.

High reliability coefficients (KR-20) were obtained for all forms. These ranged from .87 to .90 and indicated the test has a high degree of internal consistency. Test-retest correlations were lower, ranging from .62 to .85. The stability of Form E, with a test-retest correlation of .62, needs to be improved. When a pass-fail cutoff of 70% was arbitrarily set, test-retest Phi coefficients were fairly low, ranging from .29 to .73.

The validity of the Minimum Competencies Performance Test must be based on content validity. The method of test construction was intended to maximize validity by developing the items to fit the competencies they are intended to measure. The Performance Test is moderately correlated with each of the three TASK subtests. Additional investigation of the test's validity needs to be done.

Women students scored slightly higher than men students on all forms. The order among the three major ethnic categories was, from highest to lowest scores, White, Asian, Black. Some items that were indicated as possibly containing sex or ethnic bias were replaced for the Spring, 1979 version of the test. Additional study of possible bias in the test will be recommended below.

When the test is analyzed as a 14-item test with the competencies as items, the means, medians, and standard deviations of number of competencies passed do not vary much from form to form. There is some variation among the forms in the frequency distributions of scores, however. It is notable that only a small proportion of field test students passed all 14 competencies.

The inter-form correlations for the 14-item test are, for the most part, moderately high. The reliability coefficients (KR-20) are high also, but test-retest correlations are lower and should be increased on some forms.

Males and non-whites do not perform quite as well relative to females and whites, respectively, when the test is considered a 14-item (competency) test as when it is analyzed as a 44-item test. Only 2% of all Black students and 7% of all men students passed all fourteen competencies.

When the competencies are analyzed as separate tests, there are variations among forms in the percent passing each competency. Many of the inter-form Phi coefficents are very low for interchangeable forms of a test. The competencies should be made more equivalent if they are to be considered separate interchangeable measures.

Many of the KR-20 coefficients for the separate competencies are fairly high, considering how few items are included in each. These could be increased by increasing the number of items in each competency. The test-retest Phi coefficients (pass-fail correlations) for the separate competencies are low to moderate, and should be increased if the comptencies are to be considered separate tests.

Factor analysis showed that the items measuring each competency did not load neatly together. In some cases, part of the items loaded on a single factor, and part elsewhere. Items in two or more competencies sometimes loaded together on a factor. There was some consistency across forms, but considerable variation, also. The competencies are not separate factors made up of the items intended to measure them.

Possible ethnic and sex bias in the competencies needs to be studied further. There are differences in the performance of men and women students on the various competencies that indicate that not only the competencies and their associated items, but the District curriculum as well, should be examined for possible sex bias.

In general, the Minimum Competencies Performance Test, considered as a whole, is a good test. It is relatively easy, but produces sufficient score variance for good discrimination. The five forms are highly reliable, fairly stable, and most form pairs could be used as equivalents. The items were constructed to measure their competencies, and most are moderately correlated to the total score. Total test scores are correlated with achievement test scores at a level that shows the two tests measure different things, but share a common factor. There are no items on the test that are obviously ethnic or sex biased.

When the competencies are considered as separate tests made up of only a few items each, however, they do not fare so well. There is much more variation among the

forms, and many could not be used interchangeably. Reliability coefficients, both KR-20 and test-retest, are much lower than for the test as a whole. If mastery of all competencies becomes the graduation requirement, then each competency must be considered a separate test and evaluated as such. If that is the case, then considerable revision and expansion of the Performance Test must be done. That method of evaluating test performance would maximize unreliability for marginal students, as evidenced by the low test-retest and inter-form pass-fail correlations. It is those marginal students -- those who are close to the pass-fail cutoff on the competencies -- that the test should be designed for. It is imperative that valid, reliable decisions be made for those students.

RECOMMENDATIONS

Recommendations for further study and improvement of the Minimum Competencies Performance Test based on the analysis of the Fall, 1978 field test are presented below.

I. Before analysis of the Spring, 1979 field test is completed, certain decisions should be made concerning the relationship of the Performance Test to high school graduation. Answers to the following questions are needed.

   A. Will students be required to pass the test as a whole to fill the graduation requirement? If so, what score will be considered passing?

   B. Will students be required to pass all, or a certain percentage of the competencies? If so, what will be considered a passing score for each competency? What percentage of the competencies will students be required to pass?

   C. If students are required to pass all competencies, will those who pass only part of them be required to retake the whole test, or just the parts they failed?

   D. If students have not passed the Performance Test by the time they reach the last semester of their senior year, will they be <u>required</u> to take the Minimum Competencies class, or will they be allowed to retake the test? If so, how many times?

   E. How will mastery of the two competencies not specifically included in the Performance Test be measured?

II. Continue with test development, revision of items, field testing, and analysis with the following goals:

   A. Make the forms and their corresponding items and competencies more equivalent.

      1. Increase the total test inter-form correlations for form pairs A-E, B-C, C-E, and D-E.

      2. Increase the inter-form Phi coefficients for all form pairs.

      3. If a pass-fail cutoff is set, ensure that approximately equal percentages of students would pass the test regardless of the test form used.

      4. If each competency must be passed for graduation, ensure that approximately equal percentages pass each competency regardless of which test form is used.

5. Increase the inter-form Phi coefficients for each competency.

6. Increase the inter-form correlations of the 14-competency test for form pairs B-C, A-E, and C-E.

B. Improve the reliability of the test and its competencies.

1. Increase the test-retest correlation of Form E.

2. Increase the test-retest correlations and KR-20's for the competencies if they are to be considered separate measures.

3. Increase the pass-fail (Phi) correlations for test-retest; especially on Forms C and E.

4. Increase KR-20's and test-retest correlations for the 14-item test if the graduation requirement is to pass a percentage of the competencies.

III. Conduct additional studies of the test's reliability, validity, and bias.

A. Conduct a study of inter-rater reliability for the "Business Letter" and Forms" competencies in conjunction with the Spring and Fall field tests.

B. Conduct additional studies of the validity of the test.

1. Relate Performance Test scores with other measures of student achievement such as grade point average and graduation/dropout.

2. Compute correlations between the Performance Test and the Minimum Competencies Screening Test.

3. Conduct a factor analysis on items in the Performance Test and the Screening Test.

4. Compute Phi coefficients for passing (failing) the Performance Test and scoring in the upper six (or lower three) stanines on the Test of Academic Skills.

5. Examine the face validity of the competencies and their associated items to consider whether the competencies are really necessary minimum life skills and whether the items appear to be measures of the competencies?

6. Relate the competencies to the Seattle Public Schools curriculum. Document the location in the curriculum of instruction in each competency and to whom that instruction is directed.

7. Study the sensitivity of the items to instruction. One possible means of doing this would be to randomly assign students who failed the field test either to a minimum competencies class or to a situation where no special help is given. After the class is completed, all students at the schools where the classes were held who failed the field test could be retested. Scores of those who took the class could be compared to scores of those who did not.

C. Do additional studies of possible ethnic and sex bias.

1. Develop and apply more refined statistical techniques for detecting possible ethnic or sex bias.

2. Review the test and its items for sex and ethnic bias. This review should be conducted by a committee comprised of members of the five major ethnic categories and of both sexes. The inclusion of high school students should be considered.

IV. The following steps should be taken in order to increase reliability and inter-form equivalency, and to adequately measure performance on each competency.

A. The number of items per competency should be increased to at least five.

B. In order to increase reliability and inter-form equivalency, and to adequately measure performance on each competency; consideration should be given to pooling the items from all five forms, eliminating all items which have been cited as deficient, and selecting at random from the pools of items for the competencies each time the test is administered. A very large number of different forms of the test would be possible, and these forms would include only the best items. The number of items per competency could be increased as well, without writing new items.

APPENDIX I

GRADUATION REQUIREMENTS AND MINIMUM COMPETENCIES

On July 27, 1977, the Board of Directors of Seattle Public Schools adopted high school graduation requirements for students who commence grade nine in the fall of 1977 or after. These graduation requirements included the following statements:

> "In addition to meeting the credit requirements for graduation, students must successfully complete a Minimum Competencies Performance Test."
>
> "The Minimum Competencies Assurance Program attempts to assure that students graduating from Seattle Public Schools will be able to perform certain tasks. The Minimum Competencies General Screening Test Form 10-A is administered in the spring of the ninth grade year. Students who score below minimum have the opportunity to participate in intervention activities in grades ten and eleven.
>
> The Minimum Competencies Performance Test is administered in the spring of the eleventh grade year. Students who do not pass the spring test have a second opportunity to pass the test in the fall of their senior year. Students who do not pass the test at that time have a third opportunity to pass the test in January of their senior year. Prior to qualifying for a High School Diploma, students who do not pass the January test must make arrangements to take it at a later date and pass it or pass a class in the basic tasks upon which the Performance Test is based."

The basic tasks that must be mastered are:

1) The student will be able to complete forms such as job applications, voter registration, ballots and written tests, such as a driver's license test.

2) The student will be able to count money and make change.

3) The student will be able to compute total wages and verify a pay check.

4) The student will be able to read and follow simple directions for operating applicances and assembling simple items.

5) The student will be able to read, follow and alter (if necessary) simple food preparation instructions.

6) The student will be able to read and interpret advertisements such as want ads and food ads.

7) The student will be able to read and interpret product labels as: inflammable, caution. The student will be able to read and recognize danger signs and symbols and know a survival vocabulary such as: EXIT, POISON, MEN, WOMEN, POLICE.

8) The student will be able to compare prices for food, housing and clothing.

9) The student will be able to read and interpret newspaper headlines, sub-heads and leads.

10) The student will be able to write simple business letters and informal letters.

11) The student will be able to use newspapers, schedules, time tables, simple charts, and road maps to locate and interpret information.

12) The student will be able to use the basic units of English and metric measurement.

13) The student will be able to read and use a telephone directory for general and emergency purposes.

14) The student will be able to give a clear and simple oral direction.

15) The student will be able to use a dictionary for such tasks as checking and correcting spelling.

16) The student will be able to follow oral directions to perform a simple task.

APPENDIX II

A NOTE ON RELIABILITY

The Minimum Competencies Performance Test is intended to measure mastery of certain competencies. There is an item or a set of items written to match each competency, and correct responses to these items are interpreted as mastery of the associated competencies. Thus, the test is a criterion-referenced test, with the competencies being the criteria.

Some measurement specialists have argued that traditional reliability analysis is inappropriate for criterion-referenced tests.[8] The argument is that criterion-referenced tests are designed to measure mastery of the criteria: no attempt is made to discriminate among individuals along a range of abilities. The important distinction is mastery or non-mastery, not degree or level of mastery. Therefore, a good criterion-referenced test will discriminate well at the cutoff point. How far above or below this point individuals score is not important. A student who is superior in mastery of "life skills" and who answers all items in the Minimum Competencies Performance Test correctly will fill the graduation requirement. So will the student who is barely competent and scores just at the passing level. There is no practical difference in the effect of their performance, the in fact, it is not important that the test discriminate between them. A test constructed in this way may have very little variation among scores.

A norm-referenced or survey test, on the other hand, is intentionally constructed to maximize variability of scores and to discriminate among individuals along a range of abilitites. Classical reliability measures are based upon correlations, and correlations are usually not high if variance is low. Tests which are constructed in such a way as to maximize variance (like norm-referenced tests) have a better chance of having high reliability coefficients than tests for which variability is not important. When classical reliability measures are applied to criterion-referenced tests, interpretations must be made with those cautions in mind.

In practice, criterion-referenced tests sometimes have a score distribution extending over a considerable range: variance is not restricted. The Minimum Competencies Performance Test did achieve a moderate distribution of scores, with enough variance to make high reliability coefficients possible. Therefore, classical reliability measures were applied to this test, and useful information derived. Other types of analysis which have been recommended for criterion-referenced tests were also applied.

[8] Hambleton, Ronald K. and Melvin R. Novick, "Toward an Integration of Theory and Method for Criterion-Referenced Tests." Journal of Educational Measurement (10,3), Fall, 1973.

Popham, James W. and T.R. Husek, "Implications of Criterion-Referenced Measurement." Journal of Educational Measurement (6,), 1979

Another important consideration in the estimation of reliability in criterion-referenced tests in general and in the Minimum Competencies Performance Test in particular is the use to which the test will be made. Specifically, for the test at hand, will the satisfaction of graduation requirements depend upon (1) passing the test, (2) passing a certain number of competencies (tasks), or (3) passing every competency? This is a policy question which has yet to be answered. Depending upon the answer to this question, the "test" could be considered (1) one test with 44 items, (2) one test with 14 items, or (3) 14 tests, each with one to seven items. The reliability analysis should be done differently for each of these possibilities. Because this important decision has not yet been made, the reliability analysis was done all three ways. These analyses will not only provide information about the test (or tests) as it is used, but may provide information useful to making that important decision.

TABLE 1

MINIMUM COMPETENCIES PERFORMANCE TEST
COMPETENCIES MEASURED AND NUMBERS OF ASSOCIATED ITEMS
FALL, 1978 FIELD TESTING

Competency*	Number of Items
Following Oral Directions	1
Money	2
Vocabulary	7
Comparative Shopping	3
Schedule	5
Telephone Directory	4
Dictionary	3
Newspaper	2
Recipes	3
Instructions	3
Advertising	4
Check Verification	5
Business Letter	1
Forms (Applications)	1

*For complete statements of the competencies, see Appendix I.

TABLE 2

FIELD TEST SAMPLE
HIGH SCHOOLS AND NUMBER OF STUDENTS PARTICIPATING
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

High School	Number of Students	
	1st Administration	2nd Administration
Franklin	112	102
Garfield	178	162
Hale	167	136
Ingraham	409	383
Lincoln	192	171
West Seattle	163	82
Miscellaneous*	12	7
TOTAL	1233	1043

*Because of miscoded answer sheets, the schools of these students were not identified.

TABLE 3

ETHNIC DISTRIBUTION
DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS

Group	Percent in Each Category					
	Hispanic	American Indian	Asian	Black	White	N
District - Grade 12*	2.8	2.5	11.2	16.2	67.3	5123
Field Test Schools-Grade 12*	2.9	1.6	11.1	16.5	67.9	2250
Field Test Participants	2.8	1.1	11.0	15.6	69.5	1291
Form A Students	2.5	0.5	10.5	18.5	68.1	439
Form B Students	2.5	1.3	12.0	15.5	68.7	393
Form C Students	2.3	1.3	10.7	14.8	70.8	384
Form D Students	2.6	1.4	11.2	13.6	71.1	419
Form E Students	3.5	1.4	12.0	13.1	70.0	367

*Source: P-105 Report. State of Washington, Superintendent of Public Instruction, Olympia. Count date: November 1, 1978.

TABLE 4

SEX DISTRIBUTION
DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS

Group	Percent in Each Category		
	Male	Female	N
District-Grade 12*	52.2	47.8	5123
Field Test Schools-Grade 12*	51.2	48.8	2240
Field Test Participants	48.8	51.2	1291
Form A Students	47.8	52.2	439
Form B Students	46.3	53.7	393
Form C Students	47.7	52.3	384
Form D Students	52.5	47.5	419
Form E Students	46.0	54.0	367

*Source: P-105 Report. State of Washington, Superintendent of Public Instruction, Olympia. Count date: November 1, 1978.

TABLE 5

DISTRIBUTION OF LIVING SITUATION
DISTRICT, FIELD TEST SCHOOLS, FIELD TEST PARTICIPANTS

Group	Percent in Each Living Situation							
	Alone	With both Parents	With Father only	With Mother only	With Guardian	In an Agency	With Spouse	N
District-Grade 12*	0.5	70.4	3.8	19.6	5.3	0.1	0.3	4360
Field Test Schools-Grade 12	0.5	74.5	2.6	17.8	4.3	0.1	0.3	1936
Field Test Students	0.5	74.3	2.5	18.1	4.3	0.1	0.2	1291
Form A Students	0.6	72.2	2.7	19.4	4.6	0.0	0.5	439
Form B Students	0.3	74.6	2.3	18.3	4.6	0.0	0.0	393
Form C Students	1.0	74.0	2.1	18.2	4.6	0.0	0.3	384
Form D Students	0.4	74.7	1.9	18.9	3.8	0.2	0.0	419
Form E Students	0.3	76.0	3.0	16.6	3.3	0.3	0.5	367

*Students taking the TASK; Fall, 1977

TABLE 6

TASK SCORES FOR DISTRICT AND FIELD TEST GROUP
MEANS AND STANDARD DEVIATIONS OF PERCENTILE SCORES
FALL, 1977 11th GRADE SCORES

Group	Reading			English			Mathematics		
	$\bar{X}$	s	N	$\bar{X}$	s	N	$\bar{X}$	s	N
District	50.3	29.9	4194	48.5	27.7	4173	53.6	29.0	4131
Field Test Schools	54.0	28.8	1706	51.0	26.4	1724	56.8	28.1	1706
Field Test Students	55.3	28.8	1090	52.0	26.5	1101	58.1	28.4	1088
Form A Students	54.9	29.0	372	51.8	26.6	375	57.3	28.8	373
Form B Students	53.4	29.0	330	51.2	27.2	334	58.4	28.4	331
Form C Students	54.9	29.4	324	52.3	26.2	324	59.1	28.6	316
Form D Students	56.8	28.6	365	53.0	26.2	369	58.5	28.4	365
Form E Students	56.8	28.8	311	53.1	26.8	316	58.5	28.3	314

TABLE 7

TASK SCORES FOR DISTRICT AND FIELD TEST GROUP
BY SEX AND BY ETHNIC STATUS
MEANS OF PERCENTILE SCORES
FALL, 1977 11th GRADE SCORES

Sex/Ethnic	Mean Percentile Score					
	District			Field Test Students		
	Reading	English	Mathematics	Reading	English	Mathematics
Male	49.1 (2104)	42.8 (2105)	54.4 (2071)	54.0 (524)	46.0 (528)	59.6 (519)
Female	51.5 (2090)	54.3 (2068)	52.7 (2060)	56.5 (566)	57.5 (573)	56.7 (569)
Hispanic	41.7 (90)	40.3 (90)	43.4 (89)	48.6 (31)	45.1 (32)	52.1 (31)
American Indian	40.7 (72)	36.7 (71)	39.6 (64)	56.8 (12)	50.7 (12)	64.2 (12)
Asian	49.2 (473)	50.1 (479)	63.2 (480)	53.2 (113)	52.5 (115)	66.2 (115)
Black	25.4 (594)	27.8 (582)	28.7 (574)	25.7 (157)	28.2 (157)	29.2 (153)
White	55.9 (2965)	52.9 (2951)	57.5 (2924)	61.8 (777)	57.0 (785)	62.7 (777)

TABLE 8

PROPORTION CORRECT FOR EACH ITEM (*P* VALUE)
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Item	*P*				
	Form A	Form B	Form C	Form D	Form E
1	.94	.97	.96	.95	.95
2	.93	.97	.88	.97	.93
3	.99	.94	.97	.96	.96
4	.83	.45	.69	.88	.90
5	.98	.97	.07	.98	.96
6	.99	.98	.93	.97	.97
7	.96	.94	.93	.97	.82
8	.98	.98	.96	.97	.98
9	.96	.88	.97	.95	.96
10	.95	.70	.96	.89	.95
11	.93	.67	.83	.92	.70
12	.55	.57	.67	.62	.73
13	.71	.74	.65	.78	.71
14	.98	.99	.97	.98	.98
15	.98	.99	.98	.99	.98
16	.99	.98	.97	.98	.96
17	.66	.68	.69	.76	.63
18	.77	.75	.72	.74	.80
20	.78	.82	.80	.85	.83
21	.86	.78	.61	.67	.86
22	.93	.81	.82	.60	.88
23	.81	.87	.82	.92	.83
24	.89	.77	.83	.78	.89
25	.78	.64	.77	.84	.77
26	.97	.94	.96	.96	.94
27	.96	.96	.91	.61	.88
28	.89	.93	.89	.87	.93
29	.68	.85	.67	.80	.86
30	.93	.87	.67	.83	.92
31	.93	.87	.73	.93	.93

Table 8 (continued)

Item	*P*				
	Form A	Form B	Form C	Form D	Form E
32	.84	.78	.87	.77	.85
33	.96	.93	.88	.94	.93
34	.39	.33	.36	.55	.36
35	.71	.67	.68	.64	.66
36	.85	.86	.89	.61	.80
37	.93	.93	.89	.77	.81
38	.94	.94	.91	.94	.92
39	.95	.94	.92	.93	.88
40	.73	.77	.75	.75	.72
41	.88	.86	.85	.90	.82
42	.86	.86	.86	.88	.83
43	.23	.25	.27	.28	.29
44	.64	.74	.57	.65	.59

TABLE 9

ITEM-TOTAL CORRELATIONS
CORRELATIONS BETWEEN PASSING ITEM AND PASSING TEST
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

	Item-Total Correlation					Phi*				
Item	Form A	Form B	Form C	Form D	Form E	Form A	Form B	Form C	Form D	Form E
1	.11	.17	.11	.16	.28	.06	.17	.10	.24	.23
2	.32	.32	.25	.17	.30	.26	.30	.25	.12	.26
3	.27	.20	.18	.20	.26	.08	.17	.14	.16	.21
4	.42	.15	.28	.37	.37	.45	.14	.28	.38	.38
5	.25	.25	-.10	.21	.24	.10	.23	.11	.16	.12
6	.19	.30	.18	.25	.24	.03	.21	.16	.32	.17
7	.42	.36	.31	.20	.32	.33	.31	.31	.20	.33
8	.30	.31	.34	.21	.14	.24	.22	.31	.24	.09
9	.19	.26	.17	.28	.29	.17	.17	.07	.30	.24
10	.30	.28	.33	.34	.42	.23	.24	.31	.37	.39
11	.33	.31	.33	.31	.36	.27	.25	.32	.26	.24
12	.26	.28	.27	.28	.25	.22	.26	.25	.28	.25
13	.39	.30	.41	.44	.39	.31	.26	.34	.38	.34
14	.27	.31	.30	.21	.43	.15	.17	.19	.23	.33
15	.38	.30	.30	.04	.30	.27	.24	.23	.07	.20
16	.37	.15	.21	.14	.33	.27	.09	.21	.15	.20
17	.23	.29	.39	.23	.26	.21	.24	.39	.18	.20
18	.32	.45	.38	.37	.43	.28	.40	.36	.37	.37
20	.36	.35	.41	.51	.33	.29	.37	.33	.43	.24
21	.47	.30	.43	.27	.41	.42	.26	.37	.21	.34
22	.43	.40	.39	.22	.41	.40	.36	.35	.20	.34
23	.26	.40	.31	.41	.48	.20	.32	.26	.38	.42
24	.63	.59	.51	.44	.58	.59	.57	.49	.45	.53
25	.44	.43	.49	.48	.47	.36	.36	.46	.43	.41
26	.46	.43	.41	.49	.47	.34	.38	.31	.50	.45
27	.53	.47	.34	.31	.54	.43	.42	.30	.23	.48
28	.59	.43	.47	.52	.50	.52	.29	.44	.53	.45
29	.42	.46	.39	.49	.50	.38	.38	.35	.45	.45
30	.49	.30	.30	.49	.57	.46	.27	.33	.51	.57
31	.47	.28	.31	.51	.55	.40	.26	.28	.45	.50
32	.47	.41	.51	.58	.53	.47	.45	.51	.61	.51

Table 9 (continued)

Item	Item-Total Correlation					Phi*				
	Form A	Form B	Form C	Form D	Form E	Form A	Form B	Form C	Form D	Form E
33	.38	.49	.47	.54	.51	.36	.47	.47	.49	.41
34	.30	.25	.36	.38	.34	.24	.16	.28	.30	.22
35	.29	.30	.30	.26	.30	.19	.30	.31	.21	.24
36	.40	.41	.41	.27	.39	.36	.39	.34	.20	.38
37	.47	.52	.48	.28	.47	.39	.45	.48	.21	.40
38	.42	.42	.53	.49	.55	.36	.37	.45	.44	.42
39	.40	.46	.46	.45	.49	.31	.40	.40	.39	.44
40	.55	.50	.58	.47	.57	.45	.45	.58	.40	.46
41	.48	.44	.50	.39	.48	.45	.38	.50	.32	.42
42	.46	.48	.37	.43	.47	.40	.44	.39	.34	.35
43	.28	.26	.26	.30	.30	.18	.21	.22	.20	.18
44	.35	.22	.24	.33	.34	.28	.23	.28	.34	.24

*Correlation between pass-fail for item and pass-fail for test with an arbitrary passing score of 31 (70%).

TABLE 10

ITEM DATA
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

Item	Deletion Would Increase KR-20		Responses Include Disproportionate Misleads*	Possible Sex Bias*	Possible Ethnic Bias*
	Of Total Test*	Of Competency*			
1	A C				
2				A	
3					
4	B	C	C	B	
5	C	C	C	A	
6					
7		E			
8	E				
9					
10					
11		D	B	C	
12	A E	A E		B C	
13				C E	
14				A	
15	D				
16				A	
17	A	A E	A		
18			A B	D	
20					
21			B D		
22	D		D	E	
23				A D E	
24				B	
25			A		
26					
27			D		
28					
29		A	A C		E
30		B C D	C	C	
31		C	C		

Table 10 (continued)

Item	Deletion Would Increase KR-20		Responses Include Disproportionate Misleads*	Possible Sex Bias*	Possible Ethnic Bias*
	Of Total Test*	Of Competency*			
32		D E		B	
33					
34		B	A B C E		
35			B C D E	D	
36				D	
37			D	D	
38					
39					
40		A D		E	
41				E	
42				E	
43				A B C D E	
44	B C			A B C D E	

TABLE 11

SUMMARY STATISTICS OF TOTAL SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
By Form*

Statistic	Form A	Form B	Form C	Form D	Form E
Mean	37.4	35.9	34.8	36.3	36.9
Median	38.9	37.7	36.4	37.8	38.8
Mode	40.0	38.0	40.0	40.0	42.0
Range	32.0	43.0	33.0	32.0	39.0
Standard Deviation	5.5	5.9	6.2	5.9	6.2
Number of Cases	455	406	397	434	384

*Scores included in each form are those of students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 12
CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
By Form *

Number of Correct Items	Cumulative Percentage Distribution				
	Form A	Form B	Form C	Form D	Form E
1	0.0	0.2	0.0	0.0	0.0
5	0.0	0.2	0.0	0.0	0.3
10	0.0	0.2	0.3	0.0	0.5
12	0.2	0.2	1.0	0.2	0.5
13	0.4	0.7	1.3	0.5	0.5
14	0.4	1.0	1.3	0.5	0.8
15	0.7	1.2	1.8	0.9	0.8
16	0.7	1.2	1.8	1.2	1.0
17	0.7	2.0	2.0	2.1	1.6
18	1.1	2.2	2.5	2.3	2.3
19	1.5	2.5	2.8	3.0	2.6
20	1.8	3.2	3.3	3.2	2.9
21	2.4	3.2	3.8	3.5	3.6
22	2.6	3.2	5.3	3.9	4.2
23	2.9	3.4	6.5	4.6	4.7
24	3.3	4.7	8.1	5.3	5.2
25	4.2	4.9	9.8	6.0	5.7
26	5.3	6.4	11.3	7.4	6.8
27	7.3	8.6	11.8	8.3	8.3
28	8.6	11.1	13.9	10.8	10.2
29	9.7	12.3	17.1	12.2	11.7
30	11.2	14.8	18.9	13.4	14.1
31	13.8	17.7	22.9	15.4	15.6
32	16.3	21.9	26.7	18.7	18.8
33	17.8	27.3	31.5	22.8	21.9
34	19.8	33.5	37.0	27.9	24.7
35	25.3	36.9	43.8	34.6	29.7
36	29.9	43.3	50.4	41.0	35.9
37	38.5	47.5	56.9	48.4	41.1
38	45.9	59.6	67.5	54.6	47.4
39	56.9	69.7	75.6	62.9	56.3
40	68.8	79.3	87.2	74.0	67.2
41	78.9	89.4	92.7	85.0	78.4
42	90.1	95.8	98.7	93.8	90.4
43	97.4	98.8	100.0	98.4	96.6
44	100.0	100.0	100.0	100.0	100.0
Total N	455	406	397	434	384

*Scores included in each form are those of students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 13

TEST-RETEST AND INTER-FORM DATA
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

Form Pair	Medians		Means		Standard Deviations		r*	Phi**	N
A-A	38.8	39.3	37.0	37.8	5.8	5.4	.85	.73	43
B-B	38.8	38.8	37.2	37.6	6.3	5.7	.78	.69	40
C-C	37.7	37.2	34.6	35.3	6.7	6.6	.80	.29	35
D-D	39.5	39.5	37.1	37.3	6.0	7.5	.73	.63	44
E-E	37.8	38.9	36.7	36.6	4.5	6.6	.62	.38	39
A-B	38.1	38.1	36.5	35.6	6.8	7.6	.82	.61	65
A-C	39.0	36.2	37.5	34.3	4.8	6.5	.77	.56	84
A-D	38.8	37.5	37.7	36.1	5.2	5.8	.77	.46	74
A-E	39.5	38.8	38.6	37.3	3.9	5.4	.66	.53	79
B-C	38.0	36.5	36.6	35.2	5.8	6.2	.54	.75	64
B-D	37.7	37.0	36.0	36.3	5.3	5.3	.81	.62	82
B-E	37.8	39.1	36.5	37.3	4.6	6.2	.76	.63	69
C-D	37.5	38.2	35.9	36.5	5.8	6.6	.70	.48	68
C-E	36.2	39.1	35.4	36.9	5.5	6.6	.69	.47	72
D-E	38.4	39.3	36.6	36.7	5.9	6.9	.68	.55	77

*Pearson correlation coefficient for total scores on the form pairs.
**Pass-fail correlation coefficients for the form pairs with an arbitrary passing score of 31 (70%).

TABLE 14

TEST-RETEST AND INTER-FORM DATA
PERCENT PASSING* EACH FORM IN FORM PAIRS
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

Form Pair	Percent Passing	
A-A	83.7	90.7
B-B	90.0	95.0
C-C	80.0	80.0
D-D	88.6	90.9
E-E	89.7	87.2
A-B	86.2	81.5
A-C	90.5	75.0
A-D	91.9	86.5
A-E	93.7	87.3
B-C	90.6	84.4
B-D	82.9	87.8
B-E	89.9	88.4
C-D	89.7	88.2
C-E	86.1	83.3
D-E	87.0	83.1

*Passing at arbitrary cutoff point of 70%

TABLE 15

TEST-RETEST AND INTER-FORM DATA
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PERCENT PASSING* ONE FORM ALSO PASSING
THE PAIRED FORM

Form	Paired Form				
	A	B	C	D	E
A	100.0	91.1	82.9	91.2	91.9
B	96.2	100.0	93.1	97.1	95.2
C	100.0	100.0	85.7	93.4	90.3
D	96.9	91.7	95.0	97.4	91.0
E	98.6	96.7	93.3	95.3	91.4

*Passing score arbitrarily set at 31 (70%).

TABLE 16

TEST-RETEST AND INTER-FORM DATA
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PERCENT FAILING* ONE FORM ALSO FAILING THE PAIRED FORM

Form	Paired Form				
	A	B	C	D	E
A	57.1	77.8	100.0	66.7	80.0
B	58.3	50.0	100.0	57.1	71.4
C	38.1	60.0	42.9	57.1	60.0
D	40.0	80.0	50.0	60.0	70.0
E	40.0	62.5	50.0	53.8	50.0

*Passing score arbitrarily set at 31 (70%).

TABLE 17

RELIABILITY COEFFICIENTS (KR-20)
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Form	KR-20
A	.88
B	.87
C	.87
D	.87
E	.90

TABLE 18

CORRELATIONS* BETWEEN MINIMUM COMPETENCIES PERFORMANCE TEST
AND SUBTESTS OF THE TASK
FALL, 1978 FIELD TEST AND FALL, 1977 TASK
BY FORM

Form of the Min Comp Test	TASK Subtest					
	Reading		English		Mathematics	
	r	N	r	N	r	N
A	.60	372	.66	375	.61	373
B	.70	330	.69	334	.64	331
C	.61	324	.61	324	.59	316
D	.60	365	.65	369	.62	365
E	.66	311	.60	316	.62	314

*All correlations are statistically significant at the .001 level.

TABLE 19

MEAN NUMBER OF ITEMS PASSED BY SEX
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM*

Sex	Form A		Form B		Form C		Form D		Form E	
	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
Male	36.9	210	35.6	182	34.6	183	36.0	220	36.3	169
Female	38.0	229	36.2	211	35.4	201	37.0	199	37.4	198
Total	37.5	439	35.9	393	35.0	384	36.5	419	36.9	367

TABLE 20

MEAN NUMBER OF ITEMS PASSED BY ETHNIC STATUS
FALL, 1978 FIELD TEST OF THE MINIMUN COMPETENCIES PERFORMANCE TEST
BY FORM*

Ethnic Status	Form A		Form B		Form C		Form D		Form E	
	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
Hispanic	35.4	11	36.6	10	34.6	9	33.9	11	35.7	13
American Indian	37.0	2	33.6	5	37.4	5	38.3	6	33.2	5
Asian	36.1	46	35.4	47	35.1	41	35.6	47	37.4	44
Black	32.9	81	30.7	61	30.5	57	32.5	57	30.9	48
White	39.0	299	37.2	270	35.9	272	37.4	298	38.0	257
Total	37.4	439	35.9	393	35.0	384	36.5	419	36.9	367

TABLE 21

CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FORM A OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Correct Items	Ethnic Status				
	Hispanic	American Indian	Asian	Black	White
12	0.0	0.0	0.0	1.2	0.0
13	0.0	0.0	0.0	2.5	0.0
15	0.0	0.0	0.0	2.5	0.3
18	0.0	0.0	0.0	4.9	0.3
19	0.0	0.0	0.0	6.2	0.7
20	0.0	0.0	0.0	7.4	0.7
21	9.1	0.0	2.2	7.4	0.7
22	9.1	0.0	4.3	7.4	0.7
23	9.1	0.0	4.3	8.6	0.7
24	9.1	0.0	4.3	9.9	1.0
25	9.1	0.0	10.9	11.1	1.0
26	9.1	0.0	10.9	16.0	1.3
27	9.1	0.0	17.4	18.5	2.0
28	9.1	0.0	19.6	19.8	3.3
29	18.2	0.0	19.6	21.0	3.7
30	18.2	0.0	21.7	25.9	4.3
31	18.2	0.0	26.1	33.3	5.0
32	36.4	0.0	28.3	39.5	6.0
33	36.4	0.0	28.3	46.9	6.4
34	36.4	0.0	30.4	49.4	8.4
35	36.4	0.0	34.8	60.5	13.0
36	36.4	50.0	34.8	69.1	17.4
37	54.5	50.0	41.3	79.0	26.1
38	54.5	100.0	52.2	82.7	33.8
39	72.7	100.0	63.0	85.2	46.5
40	81.8	100.0	71.7	90.1	61.2
41	90.9	100.0	76.1	95.1	73.9
42	100.0	100.0	87.0	98.8	87.3
43	100.0	100.0	100.0	100.0	96.0
44	100.0	100.0	100.0	100.0	100.0
Total N	11	2	46	81	299

TABLE 22

CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FORM B OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Correct Items	Ethnic Status				
	Hispanic	American Indian	Asian	Black	White
1	0.0	0.0	0.0	1.6	0.0
13	0.0	0.0	0.0	1.6	0.7
14	0.0	0.0	0.0	3.3	0.7
15	0.0	0.0	0.0	4.9	0.7
17	0.0	0.0	0.0	6.6	1.5
18	0.0	0.0	0.0	8.2	1.5
19	0.0	0.0	0.0	9.8	1.5
20	10.0	0.0	0.0	9.8	1.9
23	10.0	0.0	2.1	9.8	1.9
24	10.0	0.0	4.3	14.8	2.2
25	10.0	0.0	4.3	14.8	2.6
26	10.0	0.0	8.5	16.4	3.3
27	10.0	0.0	14.9	21.3	4.4
28	10.0	0.0	14.9	27.9	6.7
29	10.0	0.0	17.0	31.1	7.4
30	10.0	0.0	17.0	39.3	9.3
31	10.0	40.0	19.1	45.9	11.1
32	20.0	40.0	25.5	54.1	14.1
33	20.0	40.0	31.9	65.6	17.8
34	30.0	80.0	40.4	72.1	22.6
35	30.0	80.0	42.6	75.4	26.7
36	30.0	80.0	44.7	85.2	33.3
37	30.0	80.0	53.2	88.5	37.4
38	40.0	100.0	61.7	91.8	51.9
39	60.0	100.0	72.3	96.7	63.0
40	70.0	100.0	87.2	96.7	74.4
41	90.0	100.0	97.9	98.4	85.6
42	100.0	100.0	100.0	98.4	94.4
43	100.0	100.0	100.0	100.0	98.5
44	100.0	100.0	100.0	100.0	100.0
Total N	10	5	47	61	270

TABLE 23

CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FORM C OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Correct Items	Ethnic Status				
	Hispanic	American Indian	Asian	Black	White
10	0.0	0.0	0.0	0.0	0.4
12	0.0	0.0	0.0	3.5	0.4
13	0.0	0.0	2.4	3.5	0.4
15	0.0	0.0	2.4	3.5	1.1
17	0.0	0.0	2.4	5.3	1.1
18	0.0	0.0	4.9	5.3	1.5
19	0.0	0.0	4.9	7.0	1.5
20	0.0	0.0	7.3	7.0	1.5
21	0.0	0.0	7.3	8.8	1.8
22	0.0	0.0	7.3	15.8	2.6
23	0.0	0.0	7.3	19.3	3.7
24	0.0	0.0	7.3	21.1	5.5
25	0.0	0.0	7.3	22.8	7.7
26	0.0	0.0	7.3	28.1	8.1
27	11.1	0.0	7.3	28.1	8.1
28	11.1	0.0	12.2	31.6	9.6
29	22.2	0.0	17.1	36.8	11.8
30	33.3	0.0	17.1	43.9	12.5
31	33.3	0.0	22.0	45.6	17.3
32	33.3	20.0	24.4	54.4	19.9
33	44.4	20.0	34.1	61.4	23.5
34	44.4	20.0	43.9	63.2	29.4
35	55.6	40.0	43.9	70.2	36.4
36	55.6	40.0	48.8	77.2	43.4
37	55.6	40.0	53.7	87.7	50.0
38	77.8	40.0	56.1	93.0	63.2
39	77.8	60.0	65.9	98.2	71.7
40	88.9	80.0	80.5	100.0	85.3
41	100.0	100.0	92.7	100.0	90.4
42	100.0	100.0	95.1	100.0	98.9
43	100.0	100.0	100.0	100.0	100.0
44	100.0	100.0	100.0	100.0	100.0
Total N	9	5	41	57	272

TABLE 24

CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FORM D OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Correct Items	Ethnic Status				
	Hispanic	American Indian	Asian	Black	White
12	0.0	0.0	0.0	0.0	0.3
13	0.0	0.0	0.0	1.8	0.3
15	0.0	0.0	2.1	1.8	0.7
16	0.0	0.0	2.1	1.8	1.0
17	0.0	0.0	2.1	3.5	2.0
18	0.0	0.0	2.1	3.5	2.3
19	0.0	0.0	4.3	3.5	2.7
20	0.0	0.0	4.3	3.5	3.0
21	0.0	0.0	4.3	3.5	3.4
22	0.0	0.0	4.3	5.3	3.4
23	9.1	0.0	4.3	8.8	3.4
24	9.1	0.0	4.3	10.5	3.7
25	9.1	0.0	4.3	12.3	4.4
26	9.1	0.0	8.5	14.0	4.7
27	9.1	0.0	10.6	15.8	5.0
28	9.1	16.7	14.9	22.8	6.4
29	9.1	16.7	17.0	26.3	7.0
30	18.2	16.7	17.0	29.8	7.7
31	27.3	16.7	19.1	36.8	8.4
32	36.4	16.7	23.4	47.4	10.1
33	36.4	16.7	29.8	49.1	14.8
34	36.4	16.7	31.9	57.9	20.1
35	54.5	16.7	46.8	71.9	24.2
36	72.7	16.7	51.1	75.4	31.5
37	81.8	16.7	53.2	80.7	40.3
38	90.9	33.3	61.7	84.2	46.6
39	90.9	33.3	66.0	91.2	56.7
40	100.0	66.7	70.2	94.7	70.1
41	100.0	83.3	85.1	94.7	82.9
42	100.0	83.3	93.6	100.0	92.3
43	100.0	100.0	100.0	100.0	97.7
44	100.0	100.0	100.0	100.0	100.0
Total N	11	6	47	57	298

TABLE 25

CUMULATIVE PERCENTAGE DISTRIBUTION OF TOTAL SCORES
FORM E OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Correct Items	Ethnic Status				
	Hispanic	American Indian	Asian	Black	White
5	0.0	0.0	2.3	0.0	0.4
14	0.0	0.0	2.3	0.0	0.8
16	0.0	0.0	4.5	0.0	0.8
17	0.0	0.0	4.5	4.2	0.8
18	0.0	0.0	4.5	6.3	1.2
19	0.0	0.0	4.5	6.3	1.6
20	0.0	0.0	4.5	8.3	1.6
21	0.0	0.0	4.5	10.4	2.3
22	0.0	20.0	4.5	12.5	2.3
23	0.0	20.0	4.5	14.6	2.7
24	0.0	20.0	4.5	16.7	3.1
25	7.7	20.0	4.5	18.8	3.1
26	15.4	20.0	4.5	22.9	3.5
27	15.4	20.0	4.5	29.2	4.7
28	23.1	20.0	4.5	37.5	5.1
29	30.8	20.0	4.5	41.7	6.2
30	30.8	20.0	6.8	47.9	8.2
31	30.8	20.0	9.1	52.1	9.3
32	30.8	20.0	11.4	54.2	12.8
33	30.8	20.0	15.9	60.4	15.2
34	30.8	40.0	15.9	66.7	17.9
35	30.8	60.0	22.7	70.8	22.6
36	38.5	60.0	31.8	79.2	27.6
37	46.2	80.0	36.4	83.3	32.7
38	61.5	100.0	45.5	87.5	38.5
39	69.2	100.0	56.8	89.6	48.6
40	69.2	100.0	61.4	93.8	62.6
41	84.6	100.0	79.5	97.9	74.3
42	92.3	100.0	90.9	100.0	88.3
43	92.3	100.0	97.7	100.0	96.1
44	100.0	100.0	100.0	100.0	100.0
Total N	13	5	44	48	257

TABLE 26

MALE STUDENTS' MEAN RAW SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN RAW SCORES
FALL, 1977 TEST OF ACADEMIC SKILLS
TOTAL DISTRICT AND FIELD TEST PARTICIPANTS

Tested Group	TASK Subtest		
	Reading	English	Math
District	.98	.89	1.02
Field Test Participants	.97	.90	1.04

TABLE 27

MALE STUDENTS' MEAN SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Tested Group	Form of the Minimum Competencies Test				
	A	B	C	D	E
Field Test Participants	.97	.98	.98	.97	.97

TABLE 28

NON-WHITE STUDENTS' MEAN RAW SCORES AS PROPORTION OF WHITE STUDENTS' MEAN RAW SCORES
FALL, 1977 TEST OF ACADEMIC SKILLS
TOTAL DISTRICT AND FIELD TEST PARTICIPANTS

Tested Group	TASK Subtest		
	Reading	English	Math
District			
Hispanic	.85	.87	.82
American Indian	.85	.85	.77
Asian	.93	.96	1.07
Black	.68	.74	.62
Field Test Participants			
Hispanic	.87	.88	.87
American Indian	.95	.93	1.02
Asian	.93	.95	1.04
Black	.66	.73	.59

TABLE 29

NON-WHITE STUDENTS' MEAN SCORES AS PROPORTION OF WHITE STUDENTS' MEAN SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Tested Group	Form of the Minimum Competencies Test				
	A	B	C	D	E
Field Test Participants					
Hispanic	.91	.98	.96	.91	.94
American Indian	.95	.90	1.04	1.02	.87
Asian	.93	.95	.98	.95	.98
Black	.84	.83	.85	.87	.81

TABLE 30

SUMMARY STATISTICS OF COMPETENCY SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Statistic	Form				
	A	B	C	D	E
Mean	11.7	11.4	11.0	11.1	11.3
Median	12.2	12.0	11.7	11.5	11.9
Mode	13.0	13.0	13.0	12.0	13.0
Range	14.0	13.0	13.0	13.0	14.0
Standard Deviation	2.2	2.2	2.5	2.3	2.5
Number of Cases	454	406	398	434	384

TABLE 31

DISTRIBUTION OF NUMBER OF COMPETENCIES PASSED
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM*

Number of Competencies Passed	Percentage Distribution				
	Form A	Form B	Form C	Form D	Form E
0	0.2	0.0	0.0	0.0	0.3
1	0.2	0.2	0.5	0.2	0.3
2	0.0	0.2	0.5	0.2	0.5
3	0.2	0.7	0.5	0.7	0.5
4	0.7	1.0	0.3	0.7	1.0
5	1.3	0.7	2.3	1.2	2.1
6	1.1	1.0	3.0	2.8	0.5
7	1.8	2.2	2.5	2.3	3.1
8	3.7	7.1	6.5	5.1	5.2
9	5.9	4.7	7.3	6.9	4.4
10	6.6	7.9	7.8	11.8	9.1
11	12.1	12.6	16.6	19.6	14.1
12	23.6	23.4	19.8	19.8	19.8
13	28.9	27.1	22.1	19.4	26.6
14	13.7	11.1	10.3	9.4	12.5
Number of Students	454	406	398	434	384

*Scores included in each form are those of students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 32

CUMULATIVE PERCENTAGE DISTRIBUTION OF NUMBER OF COMPETENCIES PASSED FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST BY FORM*

Number of Competencies Passed	Cumulative Percentage Distribution				
	Form A	Form B	Form C	Form D	Form E
0	0.2	0.0	0.0	0.0	0.3
1	0.4	0.2	0.5	0.2	0.5
2	0.4	0.5	1.0	0.5	1.0
3	0.7	1.0	1.5	1.2	1.3
4	1.3	1.7	1.8	1.8	2.3
5	2.2	2.7	3.3	2.8	4.4
6	3.7	3.7	6.3	5.1	4.9
7	4.4	5.7	9.0	7.4	8.1
8	8.8	11.8	15.3	12.4	12.5
9	14.3	16.7	23.1	18.7	17.4
10	20.7	25.1	31.2	30.6	26.8
11	33.7	38.4	46.7	50.5	41.1
12	57.3	61.1	67.3	71.0	60.9
13	86.3	88.7	89.7	90.1	87.5
14	100.0	100.0	100.0	100.0	100.0
Number of Students	454	406	398	434	384

*Scores included in each form are students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 33

INTER-FORM AND TEST-RETEST CORRELATIONS
FOR COMPETENCY SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

	Form									
	A		B		C		D		E	
Form	r	N	r	N	r	N	r	N	r	N
A	.78	(43)	.77	(63)	.77	(77)	.73	(69)	.44	(75)
B			.74	(40)	.54	(61)	.67	(75)	.65	(68)
C					.81	(35)	.68	(63)	.57	(69)
D							.69	(44)	.68	(72)
E									.57	(39)

TABLE 34

RELIABILITY COEFFICIENTS (KR-20) AND ITEM-TOTAL CORRELATIONS
WITH COMPETENCIES AS "ITEMS" IN A 14-ITEM TEST
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

Competency	Item-Total Correlation				
	Form A	Form B	Form C	Form D	Form E
Oral Directions	.10*	.14*	.13*	.17	.25
Money	.31	.22	.24	.22	.30
Vocabulary	.24	.38	.39	.35	.25
Comparative Shopping	.36	.30	.34	.35	.41
Schedules	.32	.28	.33	.09*	.39
Telephone Directory	.48	.42	.43	.33	.44
Dictionary	.49	.58	.50	.48	.58
Newspaper	.46	.43	.31	.31	.53
Recipes	.58	.41	.45	.52	.54
Instructions	.42	.48	.51	.52	.55
Advertising	.40	.40	.43	.32	.39
Check Verification	.52	.50	.52	.37	.51
Business Letter	.27*	.24*	.26	.28	.27*
Forms	.32	.21*	.24*	.30	.33
KR-20	.75	.73	.74	.70	.77

*Reliability coefficient (KR-20) of the 14-item test would be increased if these competencies were deleted.

TABLE 35

MEAN NUMBER OF COMPETENCIES PASSED BY ETHNIC STATUS
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM*

	Form A		Form B		Form C		Form D		Form E	
Ethnic Status	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
Hispanic	10.7	11	11.5	10	10.9	9	10.2	11	9.8	13
American Indian	11.5	2	11.4	5	12.8	5	11.5	6	10.2	5
Asian	11.2	46	11.3	47	11.1	41	11.0	47	11.6	44
Black	9.9	81	9.4	61	9.4	57	9.5	57	9.1	48
White	12.3	299	11.9	270	11.4	272	11.5	298	11.7	257
Total	11.7	439	11.4	393	11.1	384	11.1	419	11.3	367

TABLE 36

MEAN NUMBER OF COMPETENCIES PASSED BY SEX
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM*

	Form A		Form B		Form C		Form D		Form E	
Sex	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N
Male	11.3	210	11.2	182	10.9	183	10.8	220	11.0	169
Female	12.0	229	11.6	211	11.3	201	11.5	199	11.5	198
Total	11.7	439	11.4	393	11.1	384	11.1	419	11.3	367

*Scores included in each form are those of students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 38

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY SEX
ALL FORMS

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.2	0.2	0.1	0.1
1	0.3	0.5	0.1	0.2
2	0.1	0.6	0.5	0.7
3	0.5	1.1	0.4	1.1
4	0.7	1.8	0.6	1.7
5	1.4	3.2	1.1	2.8
6	1.9	5.1	1.2	4.0
7	2.3	7.4	1.8	5.8
8	5.6	13.0	4.6	10.4
9	6.7	19.7	5.0	15.4
10	10.0	29.7	7.8	23.2
11	18.2	47.9	12.9	36.1
12	23.6	71.5	19.9	56.0
13	21.5	93.0	28.2	84.2
14	7.0	100.0	15.8	100.0
Number of students		964		1038

TABLE 39

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED FORM A OF THE MINIMUM COMPETENCIES PERFORMANCE TEST FALL, 1978 FIELD TESTING BY ETHNIC STATUS

Number of Competencies Passed	Hispanic		American Indian		Asian		Black		White	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
1	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.3
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.3
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.3	0.7
4	0.0	0.0	0.0	0.0	0.0	0.0	3.7	4.9	0.0	0.7
5	0.0	0.0	0.0	0.0	2.2	2.2	3.7	8.6	0.0	0.7
6	9.1	9.1	0.0	0.0	4.3	6.5	2.5	11.1	0.3	1.0
7	0.0	9.1	0.0	0.0	0.0	6.5	3.7	14.8	0.0	1.0
8	0.0	9.1	0.0	0.0	8.7	15.2	6.2	21.0	3.3	4.3
9	9.1	18.2	0.0	0.0	8.7	23.9	14.8	35.8	1.7	6.0
10	18.2	36.4	0.0	0.0	8.7	32.6	16.0	51.9	3.0	9.0
11	36.4	72.7	50.0	50.0	8.7	41.3	17.3	69.1	11.7	20.7
12	9.1	81.8	50.0	100.0	23.9	65.2	21.0	90.1	25.4	46.2
13	9.1	90.9	0.0	100.0	19.6	84.8	7.4	97.5	36.8	82.9
14	9.1	100.0	0.0	100.0	15.2	100.0	2.5	100.0	17.1	100.0
Number of Students		11		2		46		81		299

TABLE 40

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FORM B OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Competencies Passed	Hispanic		American Indian		Asian		Black		White	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.3	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.9	0.4	0.4
4	10.0	10.0	0.0	0.0	0.0	0.0	0.0	4.9	0.7	1.1
5	0.0	10.0	0.0	0.0	0.0	0.0	4.9	9.8	0.0	1.1
6	0.0	10.0	0.0	0.0	2.1	2.1	3.3	13.1	0.4	1.5
7	0.0	10.0	0.0	0.0	2.1	4.3	3.3	16.4	1.5	3.0
8	0.0	10.0	0.0	0.0	12.8	17.0	13.1	29.5	4.1	7.0
9	0.0	10.0	0.0	0.0	2.1	19.1	18.0	47.5	3.0	10.0
10	10.0	20.0	20.0	20.0	8.5	27.7	14.8	62.3	6.7	16.7
11	10.0	30.0	40.0	60.0	17.0	44.7	14.8	77.0	12.6	29.3
12	20.0	50.0	20.0	80.0	25.5	70.2	18.0	95.1	22.6	51.9
13	40.0	90.0	20.0	100.0	19.1	89.4	3.3	98.4	34.4	86.3
14	10.0	100.0	0.0	100.0	10.6	100.0	1.6	100.0	13.7	100.0
Number of Students		10		5		47		61		270

TABLE 41

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED FORM C OF THE MINIMUM COMPETENCIES PERFORMANCE TEST FALL, 1978 FIELD TESTING BY ETHNIC STATUS

Number of Competencies Passed	Hispanic		American Indian		Asian		Black		White	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	2.4	4.9	1.8	1.8	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	4.9	1.8	3.5	0.4	0.4
4	0.0	0.0	0.0	0.0	0.0	4.9	1.8	5.3	0.0	0.4
5	0.0	0.0	0.0	0.0	0.0	4.9	7.0	12.3	0.7	1.1
6	0.0	0.0	0.0	0.0	0.0	4.9	1.8	14.0	3.7	4.8
7	11.1	11.1	0.0	0.0	2.4	7.3	3.5	17.5	2.2	7.0
8	0.0	11.1	0.0	0.0	4.9	12.2	14.0	31.6	4.4	11.4
9	22.2	33.3	0.0	0.0	9.8	22.0	17.5	49.1	5.5	16.9
10	0.0	33.3	0.0	0.0	9.8	31.7	10.5	59.6	7.4	24.3
11	22.2	55.6	0.0	0.0	14.6	46.3	15.8	75.4	16.2	40.4
12	22.2	77.8	40.0	40.0	12.2	58.5	14.0	89.5	22.8	63.2
13	11.1	88.9	40.0	80.0	29.3	87.8	8.8	98.2	25.0	88.2
14	11.1	100.0	20.0	100.0	12.2	100.0	1.8	100.0	11.8	100.0
Number of Students		9		5		41		57		272

TABLE 42

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED FORM D OF THE MINIMUM COMPETENCIES PERFORMANCE TEST FALL, 1978 FIELD TESTING BY ETHNIC STATUS

Number of Competencies Passed	Hispanic		American Indian		Asian		Black		White	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.3	0.3
3	0.0	0.0	0.0	0.0	2.1	2.1	1.8	3.5	0.3	0.7
4	0.0	0.0	0.0	0.0	2.1	4.3	0.0	3.5	0.3	1.0
5	9.1	9.1	0.0	0.0	0.0	4.3	0.0	3.5	1.0	2.0
6	0.0	9.1	0.0	0.0	2.1	6.4	7.0	10.5	1.3	3.4
7	0.0	9.1	16.7	16.7	2.1	8.5	7.0	17.5	0.7	4.0
8	9.1	18.2	0.0	16.7	8.5	17.0	8.8	26.3	3.0	7.0
9	9.1	27.3	0.0	16.7	2.1	19.1	14.0	40.4	5.7	12.8
10	9.1	36.4	0.0	16.7	14.9	34.0	26.3	66.7	9.1	21.8
11	36.4	72.7	16.7	33.3	17.0	51.1	15.8	82.5	21.5	43.3
12	27.3	100.0	33.3	66.7	19.1	70.2	5.3	87.7	23.8	67.1
13	0.0	100.0	16.7	83.3	17.0	87.2	12.3	100.0	21.5	88.6
14	0.0	100.0	16.7	100.0	12.8	100.0	0.0	100.0	11.4	100.0
Number of Students		11		6		47		57		298

TABLE 43

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FORM E OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TESTING
BY ETHNIC STATUS

Number of Competencies Passed	Hispanic		American Indian		Asian		Black		White	
	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %	%	Cum. %
0	7.7	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	0.0	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
2	0.0	7.7	0.0	0.0	2.3	2.3	2.1	2.1	0.0	0.4
3	0.0	7.7	0.0	0.0	0.0	2.3	2.1	4.2	0.0	0.4
4	0.0	7.7	0.0	0.0	2.3	4.5	0.0	4.2	1.2	1.6
5	0.0	7.7	20.0	20.0	0.0	4.5	8.3	12.5	1.2	2.7
6	0.0	7.7	0.0	20.0	0.0	4.5	2.1	14.6	0.0	2.7
7	7.7	15.4	0.0	20.0	0.0	4.5	12.5	27.1	1.9	4.7
8	15.4	30.8	0.0	20.0	2.3	6.8	14.6	41.7	2.7	7.4
9	7.7	38.5	0.0	20.0	2.3	9.1	10.4	52.1	3.9	11.3
10	7.7	46.2	20.0	40.0	11.4	20.5	14.6	66.7	8.6	19.8
11	7.7	53.8	20.0	60.0	13.6	34.1	12.5	79.2	14.4	34.2
12	30.8	84.6	20.0	80.0	22.7	56.8	10.4	89.6	20.6	54.9
13	15.4	100.0	20.0	100.0	34.1	90.9	6.3	95.8	30.0	84.8
14	0.0	100.0	0.0	100.0	9.1	100.0	4.2	100.0	15.2	100.0
Number of students		13		5		44		48		257

TABLE 44

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FORM A OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST
BY SEX

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.5	0.5	0.0	0.0
1	0.5	1.0	0.0	0.0
2	0.0	1.0	0.0	0.0
3	0.5	1.4	0.0	0.0
4	0.5	1.9	0.9	0.9
5	1.0	2.9	0.9	1.7
6	1.4	4.3	1.3	3.1
7	1.0	5.2	0.4	3.5
8	4.8	10.0	3.9	7.4
9	6.2	16.2	3.9	11.4
10	6.2	22.4	6.6	17.9
11	17.1	39.5	9.6	27.5
12	28.6	68.1	20.1	47.6
13	24.3	92.4	32.8	80.3
14	7.6	100.0	19.7	100.0
Number of Students		210		229

TABLE 45

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED FORM B OF THE MINIMUM COMPETENCIES PERFORMANCE TEST FALL, 1978 FIELD TEST BY SEX

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0
1	0.5	0.5	0.0	0.0
2	0.0	0.5	0.5	0.5
3	0.5	1.1	0.5	0.9
4	0.5	1.6	0.9	1.9
5	1.1	2.7	0.5	2.4
6	0.5	3.3	1.4	3.8
7	2.2	5.5	1.4	5.2
8	7.7	13.2	5.2	10.4
9	5.5	18.7	4.7	15.2
10	9.3	28.0	7.6	22.7
11	14.3	42.3	13.3	36.0
12	23.1	65.4	21.3	57.3
13	28.0	93.4	27.5	84.8
14	6.6	100.0	15.2	100.0
Number of Students		182		211

TABLE 46

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FORM C OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST
BY SEX

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0
1	0.5	0.5	0.0	0.0
2	0.0	0.5	1.0	1.0
3	0.0	0.5	1.0	2.0
4	0.5	1.1	0.0	2.0
5	1.1	2.2	2.0	4.0
6	4.4	6.6	1.5	5.5
7	1.1	7.7	4.0	9.5
8	8.2	15.8	3.5	12.9
9	10.4	26.2	6.0	18.9
10	8.7	35.0	7.0	25.9
11	16.9	51.9	14.9	40.8
12	20.8	72.7	20.4	61.2
13	21.3	94.0	24.4	85.6
14	6.0	100.0	14.4	100.0
Number of Students		183		201

TABLE 47

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED FORM D OF THE MINIMUM COMPETENCIES PERFORMANCE TEST FALL, 1978 FIELD TEST BY SEX

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.0	0.0	0.0	0.0
1	0.5	0.5	0.0	0.0
2	0.5	0.9	0.0	0.0
3	0.9	1.8	0.5	0.5
4	0.9	2.7	0.0	0.5
5	0.9	3.6	1.0	1.5
6	2.3	5.9	2.0	3.5
7	2.3	8.2	1.5	5.0
8	4.5	12.7	4.5	9.5
9	6.4	19.1	6.5	16.1
10	12.3	31.4	11.6	27.6
11	25.0	56.4	15.6	43.2
12	25.0	81.4	16.6	59.8
13	13.2	94.5	25.6	85.4
14	5.5	100.0	14.6	100.0
Number of Students		220		199

TABLE 48

PERCENTAGE AND CUMULATIVE PERCENTAGE DISTRIBUTIONS OF NUMBER OF COMPETENCIES PASSED
FORM E OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST
BY SEX

Number of Competencies Passed	Male		Female	
	%	Cum. %	%	Cum. %
0	0.0	0.0	0.5	0.5
1	0.0	0.0	0.5	1.0
2	0.0	0.0	1.0	2.0
3	0.6	0.6	0.0	2.0
4	0.6	1.2	1.5	3.5
5	3.6	4.7	1.0	4.5
6	0.6	5.3	0.0	4.5
7	5.3	10.7	1.5	6.1
8	3.0	13.6	6.1	12.1
9	5.3	18.9	4.0	16.2
10	13.6	32.5	6.6	22.7
11	16.6	49.1	11.6	34.3
12	18.9	68.0	20.7	55.1
13	22.5	90.5	30.3	85.4
14	9.5	100.0	14.6	100.0
Number of Students		169		198

TABLE 49

MALE STUDENTS' MEAN COMPETENCY SCORES AS PROPORTION OF FEMALE STUDENTS' MEAN COMPETENCY SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Tested Group	Form				
	A	B	C	D	E
Males	.94	.97	.96	.94	.96

TABLE 50

NON-WHITE STUDENTS' MEAN COMPETENCY SCORES AS PROPORTION OF WHITE STUDENTS' MEAN COMPETENCY SCORES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM

Tested Group	Form				
	A	B	C	D	E
Hispanic	.87	.97	.96	.89	.84
American Indian	.93	.96	1.12	1.00	.87
Asian	.91	.95	.97	.96	.99
Black	.80	.79	.82	.83	.78

TABLE 51

PERCENT PASSING EACH COMPETENCY
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
BY FORM*

Competency	Percent Passing				
	Form A	Form B	Form C	Form D	Form E
Oral Directions	94.1	97.0	96.0	94.7	94.5
Money	92.7	91.9	85.9	92.9	89.1
Vocabulary	98.2	92.9	89.9	96.1	95.1
Comparative Shopping	81.5	69.0	73.6	81.6	75.3
Schedules	98.0	98.8	98.0	98.6	97.4
Telephone Directory	91.4	86.7	78.9	78.1	90.1
Dictionary	99.3	80.8	86.7	89.9	88.3
Newspaper	95.2	92.4	89.9	60.1	84.6
Recipes	89.0	91.9	81.4	85.7	93.0
Instructions	94.3	92.6	88.9	94.0	93.7
Advertising	68.7	66.0	68.3	55.5	60.4
Check Verification	85.2	83.3	82.4	87.3	80.7
Business Letter	23.1	25.4	26.6	28.3	29.4
Forms	63.7	74.1	56.5	65.0	59.1
Number of Students	454	406	398	434	384

*Scores included in each form are those of students who took the particular form at the first test administration and those who took it at the second administration for the first time.

TABLE 52

INTER-FORM DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PERCENT PASSING EACH COMPETENCY FOR THE FORM PAIRS

Competency	Paired Forms																			
	A-B		A-C		A-D		A-E		B-C		B-D		B-E		C-D		C-E		D-E	
Oral Directions	98	100	98	96	89	93	94	96	94	92	99	98	99	94	96	96	99	96	96	95
Money	95	95	95	81	89	95	94	91	89	88	90	93	94	91	90	87	90	88	96	90
Vocabulary	98	94	98	90	100	95	99	94	92	88	93	98	94	93	94	95	93	97	96	96
Comparative Shopping	77	62	80	73	84	82	86	72	75	72	72	80	68	81	81	78	67	79	78	79
Schedules	100	98	98	96	97	99	100	96	100	97	98	98	100	100	98	98	100	96	100	99
Telephone Directory	65	70	69	50	73	46	76	77	63	51	54	34	56	66	43	31	53	78	51	64
Dictionary	88	83	89	86	96	92	95	95	88	91	78	92	83	86	90	88	85	85	92	86
Newspaper	94	91	98	82	95	58	96	86	92	91	93	56	96	87	94	69	92	85	58	78
Recipes	88	89	88	77	88	81	95	92	91	84	94	87	97	91	84	90	83	92	88	95
Instructions	92	91	95	83	93	96	96	95	94	95	93	98	94	94	94	91	89	93	95	94
Advertising	71	68	67	66	66	53	77	61	67	70	62	49	78	67	76	62	69	58	56	61
Check Verification	80	80	88	81	84	86	87	77	86	78	83	92	86	83	87	87	88	81	88	83
Business Letter	28	18	21	23	20	22	27	29	27	36	24	33	39	33	37	38	29	35	27	30
Forms	60	75	61	56	73	58	65	60	77	67	67	62	81	61	60	60	53	57	77	62

TABLE 53

INTER-FORM DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PASS-FAIL CORRELATIONS (PHI) ON COMPETENCIES

Competency	Paired Forms									
	A-B	A-C	A-D	A-E	B-C	B-D	B-E	C-D	C-E	D-E
Oral Directions	*	.39	.25	.22	.65	.70	.49	.30	.57	.56
Money	.05	.03	.49	.10	.13	.07	.08	.15	.16	.15
Vocabulary	.49	.21	*	.44	.59	.56	.07	.55	.05	.31
Comparative Shopping	.32	.29	.18	.32	.12	.04	.39	.46	.51	.34
Schedules	*	.03	.02	*	*	.49	*	.01	*	*
Telephone Directory	.58	.26	.13	.12	.10	.02	.21	.32	.23	.01
Dictionary	.58	.30	.20	.47	.36	.47	.57	.48	.25	.44
Newspaper	.58	.33	.28	.08	.11	.03	.13	.10	.01	.31
Recipes	.63	.50	.35	.15	.16	.20	.05	.11	.00	.28
Instructions	.31	.35	.49	.46	.25	.26	.20	.36	.25	.18
Advertising	.42	.66	.24	.37	.42	.16	.07	.42	.23	.36
Check Verification	.52	.29	.36	.43	.33	.21	.14	.10	.34	.38
Business Letter	.33	.34	.55	.37	.36	.39	.50	.47	.43	.49
Forms	.10	.22	.47	.31	.24	.15	.15	.32	.19	.33

*Phi cannot be computed because 100% passed the competency on one or both forms

TABLE 54

INTER-FORM DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PERCENT PASSING COMPETENCY ON ONE FORM ALSO PASSING THE
COMPETENCY ON THE PAIRED FORM

Competency	Paired Forms																	
	A-B		A-C		A-D		A-E		B-C		B-D		B-E		C-D		C-E		D-E	
Oral Directions	100	98	98	99	96	91	97	95	97	98	99	100	96	100	97	97	97	100	97	99
Money	95	95	81	96	98	93	92	94	86	88	93	91	91	94	88	92	89	92	90	97
Vocabulary	95	100	92	99	95	100	95	100	93	98	100	95	92	94	98	97	97	93	97	97
Comparative Shopping	70	88	79	87	86	87	78	93	75	78	81	73	92	77	87	91	94	79	87	85
Schedules	98	100	96	98	99	97	96	100	97	100	99	99	100	100	98	98	96	100	99	100
Telephone Directory	89	83	59	81	50	79	80	79	55	68	35	55	75	64	48	67	87	59	64	51
Dictionary	91	96	89	93	93	97	97	97	95	91	98	84	95	92	93	95	88	88	90	97
Newspaper	95	98	84	100	61	100	86	96	92	93	57	94	88	97	70	96	85	92	89	67
Recipes	96	95	85	97	86	93	93	96	86	93	88	96	91	97	91	85	92	83	97	90
Instructions	93	95	86	99	99	96	95	96	97	95	99	94	95	95	94	97	95	91	94	96
Advertising	80	84	88	89	61	77	70	90	84	80	55	70	68	80	73	90	66	79	77	70
Check Verification	90	90	85	93	92	89	84	95	84	92	94	85	85	88	88	88	86	93	88	94
Business Letter	39	58	50	47	67	62	57	52	65	48	65	48	63	74	68	65	67	56	67	61
Forms	72	57	65	70	72	91	71	77	74	84	67	72	64	86	73	73	66	61	71	88

TABLE 55

RELIABILITY COEFFICIENTS* FOR EACH COMPETENCY** AND FOR TOTAL TEST BY FORM
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES
PERFORMANCE TEST

Competency	Reliability Coefficient (KR-20)					Number Of Items
	Form A	Form B	Form C	Form D	Form E	
Money	.10	.31	.23	.05	.08	2
Vocabulary	.53	.43	.37	.61	.70	7
Comparative Shopping	.34	.43	.51	.49	.46	3
Schedules	.40	.35	.44	.29	.49	5
Telephone Directory	.49	.38	.49	.40	.45	3
Dictionary	.42	.50	.46	.50	.53	3
Newspaper	.76	.63	.54	.21	.47	2
Recipes	.57	.44	.45	.62	.66	3
Instructions	.57	.45	.48	.58	.66	3
Advertising	.41	.41	.44	.39	.52	4
Check Verification	.72	.77	.77	.80	.82	5
Total Test	.88	.87	.87	.87	.90	44

*Kuder-Richardson-20
**For each competency measured by two or more test items.

TABLE 56

ITEMS WHICH DETRACT SERIOUSLY FROM THE RELIABILITY
OF THEIR ASSOCIATED COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TESTS

Item	Form	Competency	KR-20 with item	KR-20 without item
29	A	Recipes	.57	.62
30	B	Recipes	.44	.56
34	B	Advertising	.41	.46
5	C	Vocabulary	.37	.44
30	C	Recipes	.44	.48
31	C	Instructions	.48	.56
32	D	Instructions	.58	.72
40	D	Check Verification	.80	.82
12	E	Comparative Shopping	.46	.52
17	E	Schedules	.49	.53

TABLE 57

TEST-RETEST DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES
PERFORMANCE TEST
PERCENT PASSING EACH COMPETENCY, TEST-RETEST

Competency	Form									
	A		B		C		D		E	
Oral Directions	91	93	100	95	97	94	96	96	100	97
Money	88	88	95	90	94	80	91	89	82	95
Vocabulary	93	100	92	98	86	86	98	91	95	95
Comparative Shopping	84	81	80	75	77	77	93	77	62	67
Schedules	95	100	98	100	94	97	98	96	97	95
Telephone Directory	70	77	60	70	54	66	41	57	67	77
Dictionary	84	88	85	85	89	86	91	93	95	92
Newspaper	95	100	95	98	91	89	70	77	87	90
Recipes	86	86	92	98	71	86	82	93	97	90
Instructions	95	98	92	98	91	97	96	93	97	92
Advertising	74	74	72	68	71	69	61	68	54	59
Check Verification	91	93	85	88	83	89	86	89	87	87
Business Letter	26	19	32	42	20	17	30	25	20	26
Forms	56	60	78	65	57	51	77	64	64	62

TABLE 58

TEST-RETEST DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PASS-FAIL CORRELATIONS (PHI) ON COMPETENCIES

Competency	Form				
	A	B	C	D	E
Oral Directions	.86	*	.04	.48	*
Money	.55	.31	.49	.38	.11
Vocabulary	*	.56	.30	.48	.47
Comparative Shopping	.76	.43	.68	.07	.56
Schedules	*	*	.70	.03	.04
Telephone Directory	.48	.24	.67	.73	.52
Dictionary	.82	.61	.37	.23	.07
Newspaper	*	.70	.53	.48	.12
Recipes	.81	.56	.10	.34	.05
Instructions	.03	.56	.56	.37	.56
Advertising	.51	.53	.80	.56	.59
Check Verification	.23	.26	.07	.28	.31
Business Letter	.54	.38	.53	.55	.28
Forms	.53	.11	.20	.60	.29

*Phi cannot be computed because 100% passed the competency at one or both test administrations.

TABLE 59

TEST-RETEST DATA ON COMPETENCIES
FALL, 1978 FIELD TEST OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
PERCENT PASSING COMPETENCY AT FIRST TEST ALSO PASSING THE
COMPETENCY ON THE RETEST

Competency	Form				
	A	B	C	D	E
Oral Directions	100	95	94	98	97
Money	95	92	85	92	94
Vocabulary	100	100	90	93	97
Comparative Shopping	94	84	93	78	88
Schedules	100	100	100	95	95
Telephone Directory	90	79	95	100	92
Dictionary	100	94	90	95	92
Newspaper	100	100	94	90	91
Recipes	97	100	88	97	90
Instructions	98	100	100	95	95
Advertising	88	83	92	89	86
Check Verification	95	91	90	92	91
Business Letter	54	69	57	62	50
Forms	83	68	60	79	72

TABLE 60

PERCENT PASSING EACH COMPETENCY
BY SEX
FORM A OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing	
	Male	Female
Oral Directions	94.3	94.8
Money	89.5	95.6
Vocabulary	98.6	98.2
Comparative Shopping	85.2	77.7
Schedules	96.7	99.1
Telephone Directory	90.5	93.4
Dictionary	89.0	92.6
Newspaper	94.8	96.5
Recipes	87.1	90.4
Instructions	92.9	96.1
Advertising	65.7	70.7
Check Verification	84.3	86.5
Business Letter	12.4	33.2
Forms	52.4	73.8
Number of Students	210	229

TABLE 61

PERCENT PASSING EACH COMPETENCY
BY SEX
FORM B OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing	
	Male	Female
Oral Directions	97.2	96.7
Money	91.2	92.4
Vocabulary	95.0	91.5
Comparative Shopping	73.1	64.4
Schedules	97.8	99.5
Telephone Directory	84.1	88.6
Dictionary	79.1	82.0
Newspaper	94.0	91.5
Recipes	93.4	90.5
Instructions	94.0	91.9
Advertising	65.4	66.4
Check Verification	80.2	86.7
Business Letter	12.6	36.5
Forms	66.5	80.1
Number of Students	182	211

TABLE 62

PERCENT PASSING EACH COMPETENCY
BY SEX
FORM C OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing	
	Males	Females
Oral Directions	94.5	97.0
Money	88.5	83.1
Vocabulary	91.8	90.6
Comparative Shopping	80.9	68.7
Schedules	97.8	98.5
Telephone Directory	74.9	82.6
Dictionary	86.9	87.1
Newspaper	89.1	91.0
Recipes	79.8	85.1
Instructions	86.9	91.5
Advertising	67.8	70.6
Check Verification	81.4	84.6
Business Letter	17.5	35.3
Forms	47.5	65.2
Number of Students	183	201

TABLE 63

PERCENT PASSING EACH COMPETENCY
BY SEX
FORM D OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing	
	Males	Females
Oral Directions	93.6	97.0
Money	93.2	93.5
Vocabulary	95.9	97.0
Comparative Shopping	81.4	82.4
Schedules	97.7	99.5
Telephone Directory	79.6	78.4
Dictionary	88.6	92.7
Newspaper	64.6	55.8
Recipes	85.9	87.4
Instructions	94.6	94.5
Advertising	47.7	63.3
Check Verification	85.5	89.5
Business Letter	17.3	40.2
Forms	55.5	75.9
Number of Students	220	199

TABLE 64

PERCENT PASSING EACH COMPETENCY
BY SEX
FORM E OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing	
	Male	Female
Oral Directions	92.9	95.4
Money	89.9	87.9
Vocabulary	97.0	94.4
Comparative Shopping	81.7	69.7
Schedules	97.0	97.5
Telephone Directory	87.0	92.9
Dictionary	85.2	90.9
Newspaper	83.4	84.8
Recipes	92.3	93.4
Instructions	92.3	95.0
Advertising	61.0	59.6
Check Verification	75.7	84.8
Business Letter	21.3	36.4
Forms	47.9	67.2
Number of Students	169	198

TABLE 65

PERCENT PASSING EACH COMPETENCY
BY ETHNIC GROUP
FORM A OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing				
	Hispanic	American Indian	Asian	Black	White
Oral Directions	90.9	100.0	97.8	92.6	94.6
Money	90.9	100.0	91.3	85.2	95.0
Vocabulary	90.9	100.0	95.6	97.5	99.3
Comparative Shopping	81.8	50.0	71.7	53.1	90.6
Schedules	100.0	100.0	95.6	97.5	98.3
Telephone Directory	81.8	100.0	87.0	81.5	96.0
Dictionary	63.6	100.0	87.0	79.0	95.6
Newspaper	100.0	100.0	97.8	88.9	97.0
Recipes	90.9	100.0	73.9	66.7	97.0
Instructions	81.8	100.0	91.3	90.1	96.7
Advertising	72.7	100.0	69.6	37.0	76.2
Check Verification	72.7	100.0	80.4	72.8	90.0
Business Letter	18.2	0.0	23.9	6.2	28.1
Forms	36.4	0.0	58.7	43.2	71.2
Number of Students	11	2	46	81	299

TABLE 66

PERCENT PASSING EACH COMPETENCY
BY ETHNIC GROUP
FORM B OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing				
	Hispanic	American Indian	Asian	Black	White
Oral Directions	99.0	80.0	97.9	98.4	97.0
Money	100.0	80.0	91.5	83.6	93.7
Vocabulary	90.0	100.0	91.5	83.6	95.6
Comparative Shopping	90.0	60.0	68.1	42.6	73.7
Schedules	100.0	100.0	100.0	93.4	99.6
Telephone Directory	90.0	100.0	76.6	70.5	91.5
Dictionary	80.0	80.0	76.6	45.9	89.3
Newspaper	90.0	100.0	95.7	83.6	94.1
Recipes	60.0	100.0	93.6	83.6	94.4
Instructions	100.0	100.0	89.4	83.6	95.2
Advertising	60.0	40.0	70.2	42.6	71.1
Check Verification	90.0	100.0	78.7	60.7	89.3
Business Letter	30.0	20.0	25.5	4.9	30.0
Forms	80.0	80.0	70.2	59.0	77.4
Number of Students	10	5	47	61	270

TABLE 67

PERCENT PASSING EACH COMPETENCY
BY ETHNIC GROUP
FORM C OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing				
	Hispanic	American Indian	Asian	Black	White
Oral Directions	100.0	100.0	92.7	100.0	95.2
Money	100.0	100.0	87.8	71.9	87.5
Vocabulary	77.8	100.0	75.6	86.0	94.8
Comparative Shopping	77.8	60.0	82.9	49.1	78.7
Schedules	100.0	100.0	97.6	96.5	98.5
Telephone Directory	77.8	100.0	78.0	64.9	81.6
Dictionary	66.7	100.0	90.2	73.7	89.7
Newspaper	88.9	100.0	78.0	87.7	92.3
Recipes	100.0	100.0	80.5	64.9	85.7
Instructions	100.0	100.0	92.7	75.4	91.2
Advertising	66.7	60.0	73.2	47.4	73.5
Check Verification	66.7	100.0	80.5	70.2	86.4
Business Letter	22.2	80.0	31.7	8.8	29.0
Forms	44.4	80.0	65.8	45.6	57.7
Number of Students	9	5	41	57	272

TABLE 68

PERCENT PASSING EACH COMPETENCY
BY ETHNIC GROUP
FORM D OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing				
	Hispanic	American Indian	Asian	Black	White
Oral Directions	100.0	100.0	93.6	94.7	95.3
Money	90.9	100.0	91.5	89.5	94.3
Vocabulary	90.9	83.3	89.4	91.2	99.0
Comparative Shopping	72.7	83.3	83.0	61.4	85.9
Schedules	100.0	100.0	97.9	98.2	98.7
Telephone Directory	72.7	100.0	76.6	71.9	80.5
Dictionary	81.8	83.3	91.5	80.7	93.0
Newspaper	45.4	50.0	53.2	36.8	66.8
Recipes	81.8	100.0	91.5	64.9	89.9
Instructions	90.9	100.0	91.5	93.0	95.3
Advertising	27.3	66.7	59.6	28.1	60.4
Check Verification	81.8	100.0	89.4	73.7	89.6
Business Letter	18.2	33.3	23.4	12.3	32.2
Forms	63.6	50.0	63.8	57.9	67.1
Number of Students	11	6	47	57	298

TABLE 69

PERCENT PASSING EACH COMPETENCY
BY ETHNIC GROUP
FORM E OF THE MINIMUM COMPETENCIES PERFORMANCE TEST
FALL, 1978 FIELD TEST

Competency	Percent Passing				
	Hispanic	American Indian	Asian	Black	White
Oral Directions	84.6	80.0	97.7	97.9	93.8
Money	76.9	80.0	90.9	81.2	90.7
Vocabulary	84.6	80.0	88.6	87.5	99.2
Comparative Shopping	76.9	100.0	81.8	39.6	80.2
Schedules	92.3	100.0	97.7	93.8	98.0
Telephone Directory	84.6	80.0	90.9	77.1	93.0
Dictionary	76.9	60.0	95.4	75.0	90.7
Newspaper	61.5	80.0	90.9	58.3	89.1
Recipes	76.9	100.0	95.4	79.2	95.7
Instructions	92.3	80.0	97.7	81.2	95.7
Advertising	61.5	60.0	59.1	33.3	65.4
Check Verification	69.2	80.0	90.9	58.3	83.7
Business Letter	0.0	0.0	15.9	10.4	37.4
Forms	38.5	40.0	65.9	37.5	62.3
Number of Students	13	5	44	48	257

TABLE 70

SUMMARY OF FACTOR ANALYSIS
ITEMS IN COMPETENCIES WHICH LOADED ON SAME FACTOR
FALL, 1978 FIELD TESTING OF THE MINIMUM COMPETENCIES PERFORMANCE TEST

Competency	Form A	Form B	Form C	Form D	Form E
Oral Directions Item 1			(1)		
Money Items 2,3		(2, 3)			
Vocabulary Items 4-10	(4,7,10)	(7,8)		(4,7,9) (5,6,8,9)	(4,5,6,7,8, 9,10) (9,10)
Comparative Shopping Items 11-13	(11,13)		(11,12,13)	(11,12,13)	(11,13)
Schedule Items 14-18	(14,15,16)	(14,15,16) (17,18)	(14,15,16) (17,18)	(14,15,16)	(14,15,16)
Telephone Directory Items 20-22		(21,22)	(20,21)		
Dictionary Items 23-25				(24,25)	(23,24,25)
Newspaper Items 26-27	(26,27)	(26,27)	(26,27)		(26,27)
Recipes Items 28-30	(28,30)		(28,29)	(28,29)	(28,29,30)
Instructions Items 31-33	(31,32,33)	(31,33)	(31,32,33)	(32,33) (31,33)	(31,32,33)
Advertising Items 34-37		(36,37)	(36,37)		(36,37)
Check Verification Items 38-42	(38,39) (40,41,42)	(38,39,40, 41,42)	(38,39) (38,39,40, 41,42)	(38,39,40, 41,42)	(38,39,40, 41,42)
Business Letter Item 43				(43)	
Forms Item 44		(44)			